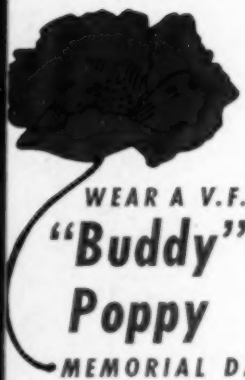
MAY, 1951

Industrial FINISHING

Published monthly in the interest of Product Finishing and Finishers by Industrial Publications, Inc., 2131 S. Michigan Street, Indianapolis 4, Ind.

Invest in your Community



If you give a dime for a Buddy Poppy to wear in your lapel on Memorial Day, you are investing in a worthy cause that pays dividends. One cent of each dime goes to V. F. W. National Rehabilitation Service—one cent to the National Home and one and one-half cents to pay for the handiwork of the veterans, disabled and needy, who make the poppies in government hospitals throughout the U. S. The rest of the dime stays right in the community where it is given.

● **Likewise every dime invested in Lilly's Dependable Products will pay dividends in producing the Right Finish for your products, so that, "With the Right Finish—You'll Finish Right." The Lilly "Key" is truly the "Key" to the Right Finish.**

THE Lilly FINISHES VARNISH COMPANY

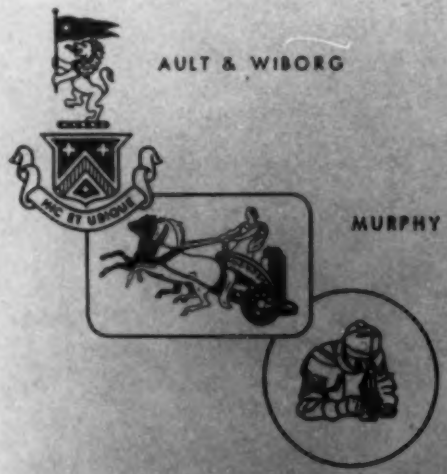
Indianapolis, Indiana • Gardner, Mass.

THE LILLY COMPANY • High Point, N. C

Interchemical *Finishes*

UNDERCOATS, VARNISHES, LACQUERS,
ENAMELS for METAL, PLASTIC, WOOD

To give your product a good start, give it an Interchemical Finish!



MAIN OFFICE: 350 FIFTH AVENUE, NEW YORK, N. Y.
FACTORIES: ELIZABETH, CINCINNATI, CHICAGO, LOS ANGELES

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Never Equalled!

BURDETT OVENS
featuring
Gas-Fired "Radiant Heat"

Here's Proof!

From an electrical manufacturer:
"Products that required 60 minutes to bake with our previous equipment . . . now go through the oven in 20 minutes."

From a spring manufacturer:
"We are getting a very fine bake in one half the time as our present conventional type ovens and, of course, it is much quicker to bring up to the desired temperature thereby saving gas and maintenance."

From an air-conditioner manufacturer:
"We are operating this cleaning and painting operation through a Burdett gas fire burn-off and bake oven at about one-half our previous cost."

A large manufacturer of diesel engines found: . . . that core drying formerly requiring 12 hours is now being done in only 12 minutes with much better results.

It's No Mystery!

Burdett "Radiant Heat" — the heart of every Burdett Oven — achieves these remarkable results in drying paints, enamels and lacquers, flash coat drying, burn-off and rust inhibiting, de-greasing, water dry-off, core baking, soft metal melting and food processing, because it features:

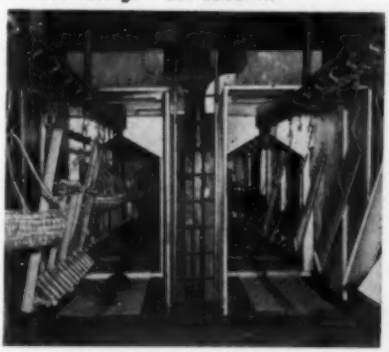
- Instant Heat Transfer
- Deep, Thorough Heat Penetration
- Fast Start Operation
- Virtual Elimination of Fuel Waste — combustion is clean and complete.

Regardless of Your Operation

you owe it to yourself and your trade to ask for Burdett Oven recommendations. There's no obligation until you sign on the dotted line — and sign you will when you learn all the facts of how little it costs, how fast it performs, and how perfect the results.

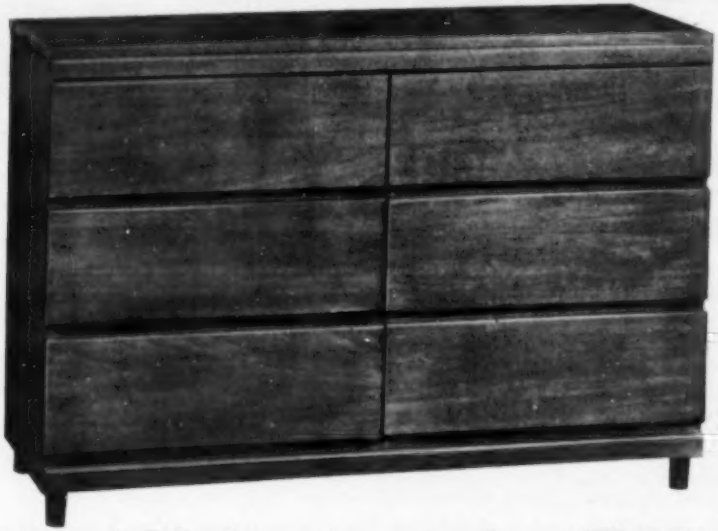
Test runs — on your product — will be made for you at the Burdett plant without obligation. See it run — see the savings — see the results.

Burdett "Radiant Heat" Gas Burners can easily be installed in present equipment with revolutionary results and savings — ask about it!



Burdett Installation in Farm Machinery Manufacturing Plant: Flow control parts — three colors in 350° F. heat zone at same time — 5 minute baking time. Customer highly recommends the Burdett Oven.

BURDETT
MANUFACTURING COMPANY
OVENS AND "RADIANT HEAT" GAS BURNERS



Spiegel Modern has modern Finish

This functional double dresser by the Spiegel Furniture Company is one of many equally smart pieces in the complete Spiegel modern line. In keeping with clean, functional design of these pieces, a special finish was created by our specialists, that reflected the modern character of the furniture. Known as Falcon Grey, this finish fulfills the manufacturers requirements for beauty and durability, and is economical in production too.

The Better the Finish.
the Better the Buy

For further information regarding our studio facilities and services, please write to

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
***Makers of the Famous* Guardsman Finish**
and Guardsman Cleaning Polish

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the 18th of each month by
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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

Contents

Random Comment on the Industrial Scene 6
Coating Thin Sheet Metal To Be Formed Into Caps and Containers 32
Automatic Spray Painting (Part III) 50
Wrinkle Finishing Modern Lighting Fixtures 64
Cleaning and Painting House-to-House Delivery Trucks 68
Conveyorized Setup for Finishing Fine Tables 76
Letters from Readers 94
Questions and Answers 104
Materials; Supplies; Equipment 108
Booklets; Circulars; Catalogs 124
Editorial 128
"Classified Advertising" Section 142
Advertisers Index 144

U. S. Testing Co. Occupies New Location in L.A. 74
Binks Pump Divn. Offers Material Handling Pumps 74
Corrosion-Resisting Finish for Oil Storage Tanks 75
Chromatone Metallic Finishes 90
Monroe Sander Corp. Has 25th Anniversary 90
Nubian Industrial Division Laboratory 122
Conference on Ind. Finishing 126
Shuman Chemical Products, Inc. Moves 139
More Linseed Oil 139
Decker Corp Moves 139
Bede Products Announces Distribution in Chi. & N.Y.C. 140
Rona Laboratories Occupies New Plant 141
Alodizing Folder Free 141
Fire Losses Up in Early 1951 141
Surface Preparation of Metals for Black Oxide Finishing 141

MAY, 1951
Vol. XXVII, No. 7

ABC

... monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

★

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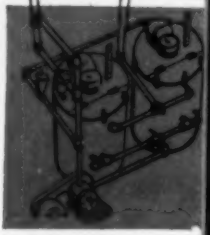
27 TWENTY-SEVENTH YEAR OF PUBLICATION

If you use 50 gallons or more of paint a day...



A Binks Paint Circulating System solves these two BIG Finishing Problems!

1 Identical finishes at every spray station. When you use a Binks Paint Circulating System, all paint...regardless of color or type...is mixed in and circulated from a central mixing point. Color and viscosity can be rigidly controlled.

To further insure uniform finishes, the material pressure at each spraying station can be set by the foreman...and cannot be altered by the operator.

So each station gets *exactly* the same paint and it's applied at *exactly* the same pressure. You are certain to get identical finishes.

2 Faster finishing at lower cost. When you use a Binks Paint Circulating System, there is no time lost waiting for delivery of paint to the booth...and no time lost changing colors.

Finishing is faster, because the operator sprays without interruption.

Your finishing costs are lower, too, for rejection or refinishing due to poor color-match is eliminated. You also save the cost of trucking material tanks to and from spray stations.

The simplest type of Binks Paint Circulating System is diagrammed above. It consists of a material tank with an agitator, a pipe line to the spray stations and back, and a circulating pump. Paint is constantly circulated. This prevents collection of sediment in the pipe lines or settling out of suspended solids in the paint.

Above: A typical mixing room for a Binks Paint Circulating System. Notice the laboratory-like cleanliness.

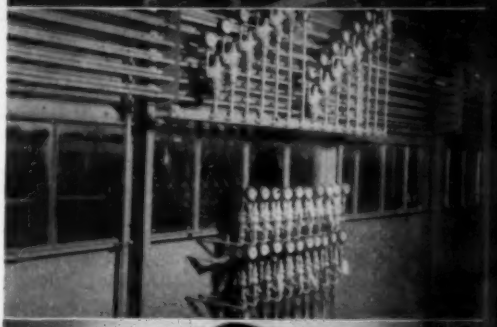
A Binks Paint Circulating System also provides these added advantages

a. A neater, a safer plant. Notice how overhead pipe lines are used to transport the paint to stations. There are no paint drums or pressure tanks to move or handle.

Flammable paint materials are stored under ideal safety conditions. Handling paints this modern way protects people and property. It can also mean big insurance savings.

a.

b. Complete control over the material pressure at the gun. A foreman sets the pressure regulator at each station with a removable key. Once set, the pressure cannot be changed by the operator. Since the material pressure and paint viscosity at each station are the same, a paint film of *uniform* thickness is applied.



b.

c. Faster production. There's no time lost in changing colors. The operator just detaches the hose for one color with a twist of the wrist...and hooks on the hose for another color in a similar swift motion. One brief "pfft" cleans the gun ...and he starts spraying the new color.

c.

EVERYTHING FOR SPRAY PAINTING

Send now for your free copy of our Bulletin 550 that describes Binks Paint Circulating Systems.

"Progress, be it individual or corporate, requires a healthy degree of dissatisfaction."

Burke B. Binks President

Binks **MANUFACTURING COMPANY**

3116-40 Carroll Ave., Chicago 12, Ill.

NEW YORK • DETROIT • LOS ANGELES • ATLANTA • BOSTON • CLEVELAND • DALLAS • MILWAUKEE • NASHVILLE
PHILADELPHIA • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • WINDSOR, ONTARIO, CANADA

Tin Substitute. Two new coatings for steel have made their appearance. Both may be used as a substitute for tin used in food containers such as cans or drums. The first is a chemical called R-108, described as an intermediate ingredient used in coating formulations to impart outstanding alkali and acid resistance. This material is especially useful for coating the inside of drums because it is highly flexible and because of its chemical resistance.

The other coating is an organic material especially designed for use in food cans. It is said to save more than 92% of the tin used in these containers. With this finish, the only tin used is in the solder used on seams.

* * *

Cut Down Waste. Now is the time to watch waste of time, effort and materials. Many materials are becoming scarce, and the cost of raw material and labor is high. Some plants are approaching the break-even point due to reduced production because of scarcities or change over to defense work. Elimination of waste may be the means of holding the line. Waste is neither useful nor profitable.

* * *

A New Synthetic Rubber known as Lactoprene is announced by three U. S. Department of Agriculture scientists, J. E. Hansen, W. E. Palm, and T. J. Dietz, talking to the Philadelphia Chapter of the American Chemical Society. This rubber is intended for use in gaskets, seals for oils and chemicals, and for linings for fuel and chemical tanks. It retains its properties through a wide range of temperatures from 40°F. below zero to 300° F. above. It is not suitable for automobile tires.

* * *

Coated Containers Safe. Shipping of materials ranging from edible foods to corrosive acids and alkalies costs less in new and reconditioned steel drums and pails coated with Bakelite polyethylene. This interior coating resists moisture and most chemicals at all ordinary temperatures. Flexible and tough over a wide temperature range, the continuous coating adheres strongly to the steel container when applied and maintains this adhesion continuity under rough shipping conditions. Packaged products contact only the relatively inert Bakelite polyethylene, never the metal.

* * *

Put it in "Moth Balls". Industry is advised to take a page out of the armed forces' book and put its unused valuable civilian production equipment in "mothballs" until the present defense emergency is over.

Spraying a weather-tight, cocoon-like covering over temporarily unneeded equipment or machines, for the "duration", is actually a low-cost, easy method of protecting against rust, rot and ruin. [*Cont'd on page 8*]

Introducing

A BRAND NEW, AND TOTALLY DIFFERENT PRODUCT

No. 2100

"HOT-R-COLD" LACQUER

OVER 35% SOLIDS—May be sprayed **HOT or COLD, without thinning** or **adjusting** of **any kind.**

HEAVY BODIED *(over 35%)*
PERFECT FLOW
LIGHT COLOR
QUICK DRY
EASY RUBBING
HIGH COLD CHECK RESISTANCE

Now you can determine for yourself, whether you prefer to spray your Lacquer HOT or COLD.

OUTSTANDING VALUE

Also a "COMPANION" Sealer

Sold with an absolute GUARANTEE OF SATISFACTION

V. J. DOLAN & COMPANY, INC.

"Unquestionable Quality"
INDUSTRIAL FINISHES

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Cleaned in a jiffy

No overnight soaking

You'll find Imperial Rapid Brush Cleaner perfect for cleaning the hardest-caked brushes *quickly*. It comes ready-to-use . . . No overnight soaking, no mixing or stirring! Contains no acids or alkalis that injure bristles—and leaves brushes with their normal spring and vitality. Synthetic brushes like nylon are perfectly safe in Imperial Cleaner. Wonderful, too, for quick color changes. Harmless to hands. Order from dealer or from us.

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RAPID
BRUSH CLEANER

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Mail coupon for further information.

WILSON-IMPERIAL CO.
125 Chestnut Street, Newark 5, N. J.

Send me the facts about Imperial Rapid Brush Cleaner.

Name_____

Company_____

Street_____

City_____ State_____

Only four steps are required to make a protective "cocoon"; 1) place cloth tapes over equipment to form a lattice-like framework; 2) spray a webbing material between tapes; 3) spray a sealing material over the webbing; 4) insert silica gel to absorb moisture.

* * *

Black-Ray U.V. Lamps. A new line of Blak-Ray high-intensity long-wave ultra-violet lamps for observing fluorescence is announced by Ultra-Violet Products, Inc., of South Pasadena, California. These lamps, originally designed for defense purposes, also have important applications for industrial inspection and laboratory analysis because of their improved u. v. output.

The invisible "black-light" rays, when directed at certain substances, cause a phenomenon known as fluorescence, whereby they radiate a color different from their own. This makes the lamps extremely useful for inspection, sorting and analysis, as the differences in fluorescent coloring are almost a sure indication of a variation in the composition, source, or history of any two or more substances.

* * *

Materials Handling. A minimum increase of 10% in America's industrial capacity can be achieved through wider and more thorough use of modern materials handling equipment, it was stated recently at the National Materials Handling Exposition, held in International Amphitheatre, Chicago, Ill.

* * *

Color TV. A new scientific communications tool for management is presented in a booklet introducing the use of the Vericolor Television System into business, education and government operations. Available upon request to the Management Controls Division of Remington Rand Inc., 315

Fourth Ave., New York 10, N.Y., the book entitled "New Color Television is here for government, for business, for education," indicates how the pooling of the resources of the Columbia Broadcasting System and Remington Rand Inc., has opened unlimited possibilities for Vericolor Television System in management and administration.

Business advantages in the full-color transmission possible are found in sales presentations, demonstrations and style showings with assured high fidelity of color and texture are covered in the booklet. Also, technical training and visual education programs . . . .

* * *

More Synthetic Rubber. A billion pounds or 500 thousand tons of American rubber in eight years has been produced at the government's Port Neches, Texas synthetic rubber plant operated by B. F. Goodrich Chemical Co.

The Port Neches plant, with rated capacity of 60,000 long tons per year, produced its first pound August 18, 1943. It continued in production after the war when most other government rubber plants were on a standby basis. The billion pound producer has also rung up an excellent safety record in its eight years of operation.

* * *

Acid-Resistant Steel. Vee jets (nozzles) used by The R. C. Mahon Co. were badly corroded in short time by 8% sulphuric acid at 160°F. The jets are used in a metal pickling process. Replacement of the 18-8 stainless steel jets was necessary every two months. To eliminate the costly replacement problem, the Mahon company selected a relatively new material, Carpenter's Stainless Steel No. 20. Use of this new stainless has increased jet life by over six times. After 13 months of use, jets made of No. 20 are still in excellent condition.

SPECIALIZATION
Saves You Money

We make nothing but Thinners—blended Solvents, and nothing else. Naturally, we buy large quantities of solvents—at lowest prices. *Specialization* saves us money on overhead too—and these savings we pass on to you, our customers.

We know how to formulate Thinners to your requirements—been doing it for 25 years. We've satisfied big and little customers . . . let us show you how a Lacquer Thinner *SPECIALIST* can supply you with the *right* Thinner . . . and still save you money.

Just fill out form below and mail today. We'll work out a Thinner *especially for you*, and send a sample. Think we can do it for less than 83¢ a gallon too!

POTTER THINNER *Specialists*

POTTER PAINT CO., INC., CORTLAND, NEW YORK

The product we make is:_____

We use Lacquer Thinner for:
☐ Spray ☐ Dip ☐ Cleaning ☐ Other_____

We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____

We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____

Address_____

City_____ Zone____ State_____

Streamline

USE THE MOST EFFICIENT OF AL

White Motor Co., Cleveland, now has 17 Fostoria Infra-red ovens. The photo above shows one of three ovens used for finishing White 3000 series Power Lift Cabs. Baking requires only 9 minutes. Operating cost is reasonable — dry-off oven, 18' 4" long, 135 KW; prime oven, 29' 4" long, 144 KW; finish oven, 29' 4" long, 128 KW.

SAVES SPACE

Fostoria Infra-red ovens operate on a comparatively short cycle which results in smaller oven requirements. They may be suspended from ceiling mounts to eliminate floor space entirely.

SAVES TIME

Reduces processing time from hours to minutes because of the inherent speed of Infra-red. There is no time lag in starting an oven. Heat is instantaneous.

SAVES MANPOWER-MANHOURS

Ideal for conveyorized production methods. Reduces expensive product handling. Turns out more pieces per day with ease, with less people.

CUTS COSTS

Faster production, lower operating costs, improved quality, result in lower "per piece" cost.

The Bersted Mfg. Co., Fostoria, Ohio, Div. of McGraw Electric Co., solved degreasing and paint problems by installing a Fostoria Infra-red oven. Fan guards are finished quickly and efficiently. The first trip through the oven, light oil is burned off. Then black japan finish is baked in 4 minutes. Production is 6,000 pieces per day. Oven is ceiling mounted saving floor space.

THE FOSTORI

YOUR FINISHING PRODUCTION *Cut Costs*

INDUSTRIAL OVENS FOR FINISH BAKING

FOSTORIA INFRA-RED

You'll be amazed at the savings you can make in space, time, manpower and costs — the marked increase in the efficiency and quality of your finishing production—by modernization with a Fostoria Engineered Infra-red Oven. *A Fostoria Infra-red System out-performs any other equipment on the market today.* Fostoria exclusive engineered features guarantee the fastest, finest finish baking at lowest "per piece" production cost. Bring your finishing production facilities up to date by modernizing, now, with Fostoria Infra-red. Case histories of installations applicable to your production are available on request.

GET THE COMPLETE FACTS!

Write, today, for factual folder on the Fostoria Infra-red System. Technical data application to your operations will be included if you send us general facts about your problems.

★ At your request, a Fostoria representative will gladly analyze your production needs and submit definite recommendations with carefully forecasted results for your consideration.

INFRA-RED fostoria SYSTEM

RESSED STEEL CORPORATION, Fostoria, Ohio

Oldest and Largest Manufacturers of Industrial Infra-red Ovens

Get Metal Parts CLEANER FASTER--CHEAPER

SEND NOW FOR SAMPLE AND FULL DETAILS ON

PELRON Corporation's Newest EMULSION CLEANERS

- New principle of detergency. Partially emulsified soil floats away —does not remain in machine to re-deposit on work.
- Less material needed for more thorough cleaning.
- Longer usable life, greatly reduced concentration means substantial saving.
- Blend of synthetic, surface-acting chemicals, non-corrosive, completely neutral, fast acting.
- Prevents rust for a number of weeks.

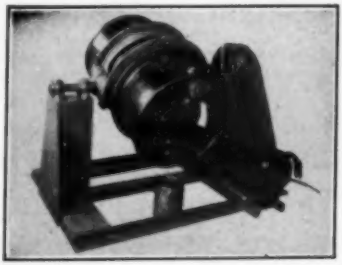
PELRON CORPORATION

FORMERLY CHEMCO PRODUCTS CO., INC.
7740 W. 47TH STREET, LYONS, ILLINOIS
Manufacturers of Industrial Chemicals

DRUM TUMBLER

. . . for mixing materials in suppliers drums

Will tumble any drum end over end at 30 rpm. Detachable crank on end of motor shaft makes it possible to turn down into any position for testing contents or draining. Portable ramps for fast insertion and removal of containers.



ASSURES:

Uniform mix
Easy inspection during operation
Withdrawals in any quantity needed.

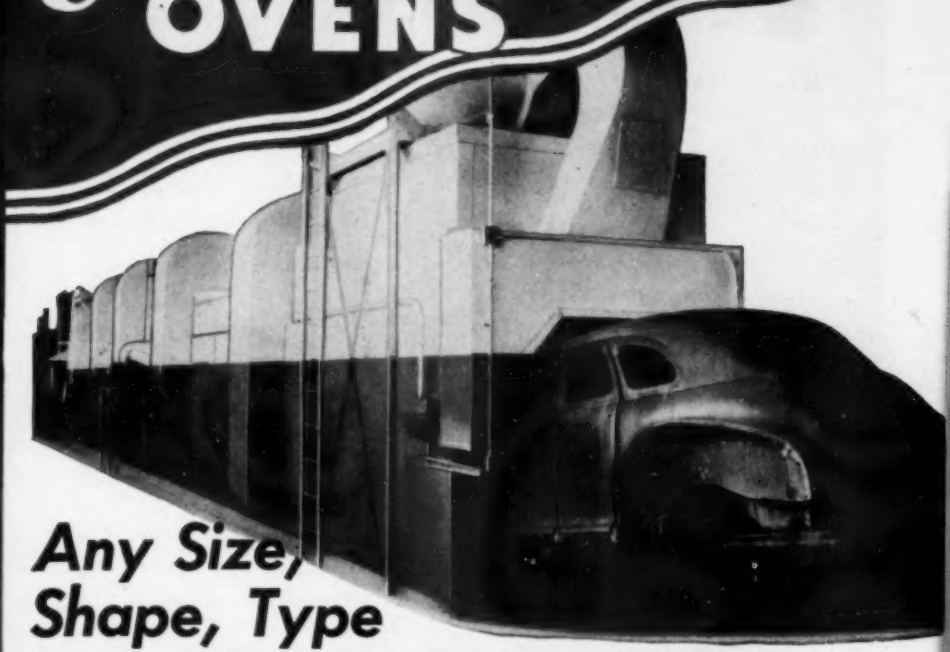
AVOIDS:

The fire hazard of open drums
Contamination of one product with another
Cleaning of equipment between mixes
Residual sludge

Send for descriptive literature!

THE VOL-U-METER CO., 75 Wilbury Pl., Buffalo 16, N.Y.

Schmieg OVENS



Any Size, Shape, Type
FOR EVERY KIND OF WORK

Whatever your requirements, Schmieg drying and baking ovens are designed and engineered to give you highest efficiency at lowest operating and maintenance cost.

Conveyor or box type, for any installation arrangement, compactly designed to save valuable floor space, engineered to fit smoothly into your production plan, Schmieg ovens *make it easy* for you to turn out the very best paint jobs.

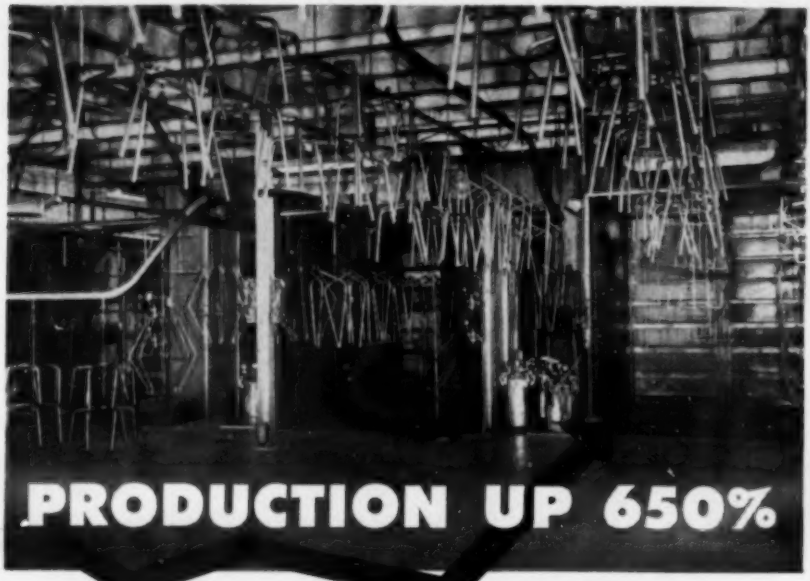
Schmieg ovens give you automatic temperature control, insure against hot spots, are meticulously insulated to prevent heat loss. Every operating essential has been carefully designed and engineered to enable you to safeguard product quality.

So we say—No matter what size, shape or type of oven you may need, for any kind of work, Schmieg ovens give you most for your money.

Consult Schmieg engineers today.

THE *best* AIR PURGE is CENTRI-MERGE

Schmieg INDUSTRIES INC.
Engineers & Manufacturers



PRODUCTION UP 650%

Rate of production jumped 650% when one eastern manufacturer of metal furniture switched from hand spray to a conveyorized system and RANSBURG ELECTRO-SPRAY. The modern electro-spray process enables this manufacturer to do in a little over 2 hours what formerly required 16 hours!

ALSO ACHIEVED WITH THE RANSBURG INSTALLATION

- **PAINT SAVINGS**—60% reduction
- **LABOR SAVINGS**—4 men made available for other work
- **QUALITY**—Eliminated retouching. "Get far better job"... "Superior finish."

Want to know what we can do for you? Ransburg engineers will analyze your specific painting requirements. No obligations, of course.

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

RANSBURG

The Sign of

CLINCO

Highest Quality

GOVERNMENT CONTRACTS

Clinton facilities and experience meet rigid government specifications. Your inquiries on Defense Contract work are welcome and will receive prompt, efficient attention. And all important — you will be assured of no compromises with quality workmanship and materials.

THE CLINTON COMPANY

1210 ELSTON AVE., CHICAGO 22, ILL.

PITTSBURGH INDUSTRIAL FINISHES

● **No matter what type** of protective coatings you need for your defense orders—Pittsburgh Industrial Finishes serve you best in a number of ways.

● **These famous finishes** do more than faithfully follow government specifications. Often they give you a plus over minimum requirements . . . provide longer service and better performance.

● **Pittsburgh** has the research and technical skill—as well as many years of experience in working with varied industries—to enable it to adapt specification materials that will assure trouble-free application under the production conditions prevailing in your plant.

PITTSBURGH

PITTSBURGH PLATE

for your defense contracts

● **Add to these** advantages Pittsburgh's wide-spread facilities—which make it possible to supply finishes promptly everywhere—and you'll realize why Pittsburgh Industrial Finishes will best serve your defense production needs.

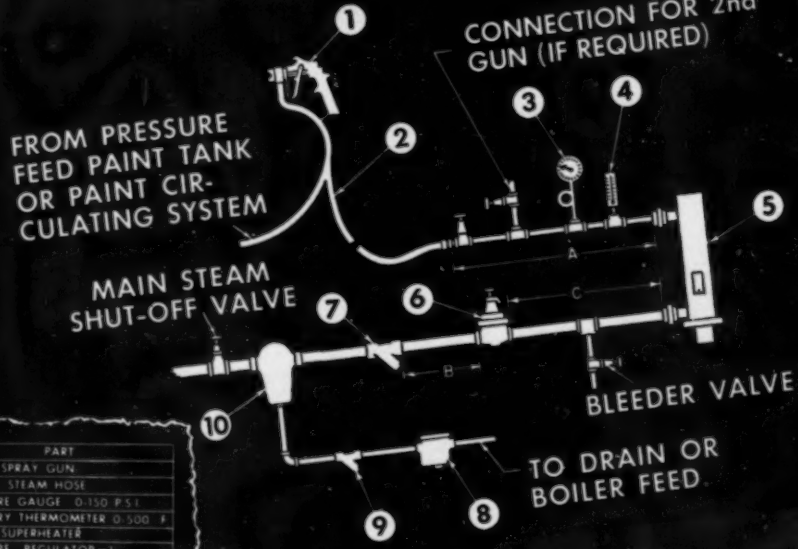
PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Division, Pittsburgh, Pa.
Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Division, Pittsburgh, Pa.

FREE ADVISORY SERVICE

Pittsburgh maintains a highly trained staff, with years of experience in working with industry, whose specialty is solving unusual finishing problems. Whenever you need help, a phone call, wire or letter will bring a Pittsburgh representative to your office for consultation—without obligation on your part.

Industrial FINISHES
GLASS COMPANY

how STEAM gives you faster lower-cost finishing!



NO.	QUAN.	PART
1		STEAM SPRAY GUN
2		SPECIAL STEAM HOSE
3		PRESSURE GAUGE 0-150 P.S.I.
4		MERCURY THERMOMETER 0-500 F.
5		STEAM SUPERHEATER
6	1	PRESSURE REGULATOR—1"
7		STRAINER—1"
8	1	STEAM TRAP—½"
9		STRAINER—½"
10		STEAM SEPARATOR—1¼"

KELLOGG DIVISION, 94 HUMBOLDT STREET, ROCHESTER 8, N. Y.

Brake Shoe

The Brake Shoe Steam-Spray Gun.

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The Brake Shoe Steam-Spray Gun makes the process practical for production-line use

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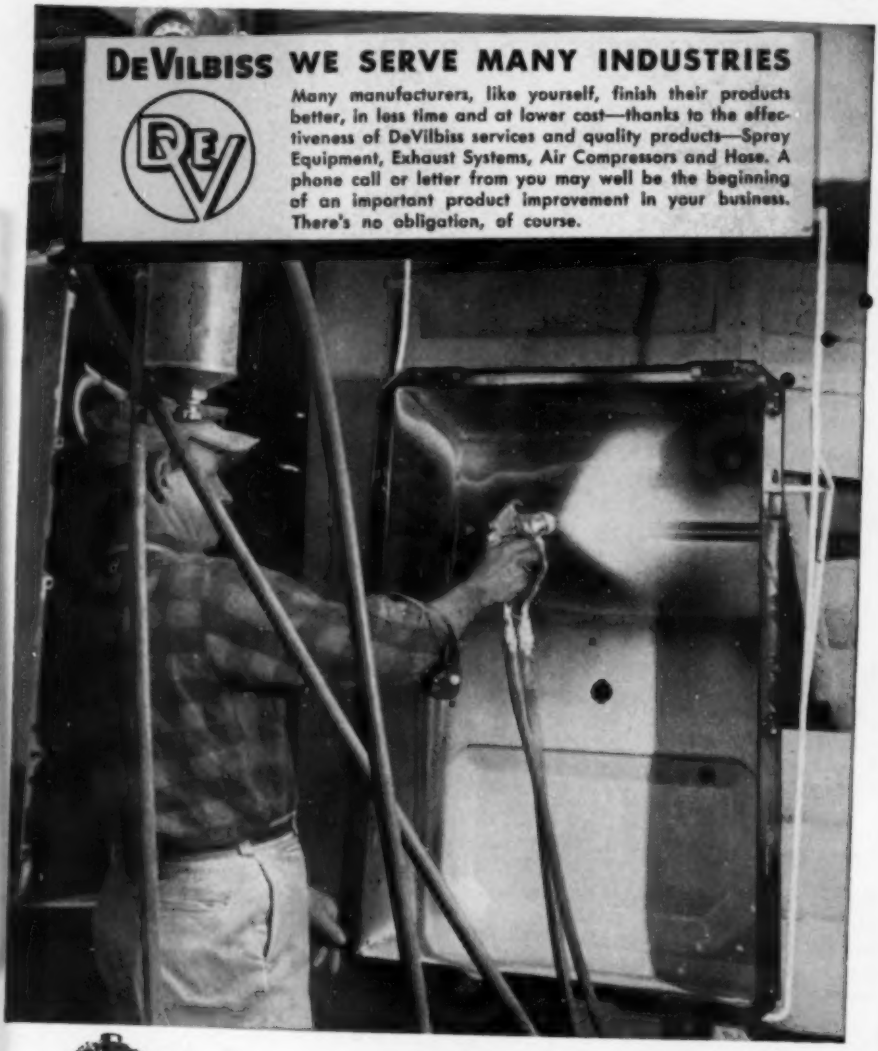

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How much can *you* benefit from DeVilbiss products and services? Here's an example that should start you thinking. The manufacturer of these refrigerator liners recently converted to new DeVilbiss low-pressure ceramic spray guns with these truly amazing results:

- Even though production *tripled,* a 35% saving in material was effected.
- Scrap loss was reduced approximately 65%.
- Before using DeVilbiss low-pressure guns, spray booths had to be cleaned after every shift. Now, once a week is sufficient—a substantial saving in maintenance costs.
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Whatever your finishing job, DeVilbiss service and precision-built products—Spray Equipment, Exhaust Systems, Air Compressors and Hose—can do much to save manhours, cut costs and improve the quality of your products.

Your inquiry to our nearest branch office, or direct to the factory, will bring you prompt information.

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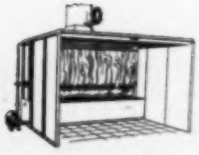

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"SCANT CHROME PLATING"

Strathmore Clear Chrome and Metal Coatings, applied over "bright zinc" metal-finishing processes, give a faithful simulation of fine chrome plating, yet require no copper, nickel or chrome. They are extremely resistant to abrasion, impact, corrosion and discoloration. Samples have withstood more than 200 hours of 20% salt spray without visible breakdown — performance far exceeding specifications for chrome plating. Usually no new equipment is required for this process—merely a change of chemicals in your existing plating tanks. By varying the chemical treatment and buffing technique, brass platings and satin chrome can also be simulated.

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Baquik Clear Chrome and Metal Coating No. X-2534

Baking type, can be dipped or sprayed. Baking range 250 F. for 1 hour to 300 F. for 15-20 minutes.

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NEW Tubular-Shaped

BURUNDUM GRINDING MEDIA

Cuts *Ball Milling Time*

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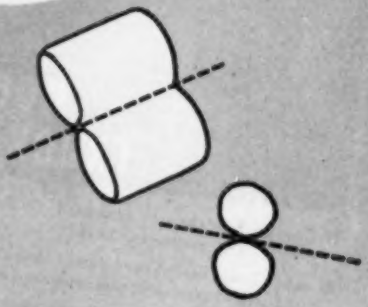
Burundum grinds faster because it is twice as heavy as flint pebbles . . . and more than twice as hard. (Burundum is almost as hard as a diamond, can only be cut with a diamond wheel.)

Burundum grinds faster because its unique tubular shape provides infinitely greater grinding contact area.

Burundum is tough. Wears slowly, uniformly. Keeps contamination down. Washes easily.

For double production from a single ball mill—charge with Burundum.



Burundum's tubular shape means greater grinding contact area. No matter how the media falls contact area is greater than the pin-point contact characteristic of spherical media.

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- Complete and ready to operate. All accessory equipment is included.
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In addition to ovens and other specialized equipment, we design, build and install **complete** finishing systems to your individual requirements. ***Write for Circular A-4.***

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NACROMER is an excellent substitute for Pearl Essence where cost is a factor and where the high brilliance of natural pearl is not necessary.

It is—

- **Stable**
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"World's Largest Producer of Pearl Essence"

WHITE...for life with KEMCLAD!®

TOUGH AND MARPROOF
Kemclad formulations include special ingredients to protect finish against marring, chipping or scratching.
HOT GREASE? NO HARM DONE! Even hot grease won't damage Kemclad's gleaming white finish!
STAYS WHITE AND STAIN-FREE! Kemclad Finishes aren't affected by food acids, weak alkalies, alcohols or other common household chemicals.
CLEANS EASILY...SAFELY! Kemclad's smooth surface cleans easily with damp cloth, but withstands strong detergents safely.

Like other quality-conscious appliance manufacturers, W. R. AMES COMPANY, San Francisco, has found KEMCLAD Appliance Finishes to be the answer in making white cabinets that *stay* gleaming white!

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Investigate what these newest technical developments in synthetic resin appliance finishes can offer you. Check your Sherwin-Williams representative or write The Sherwin-Williams Co., 101 Prospect Avenue, Cleveland 1, Ohio.

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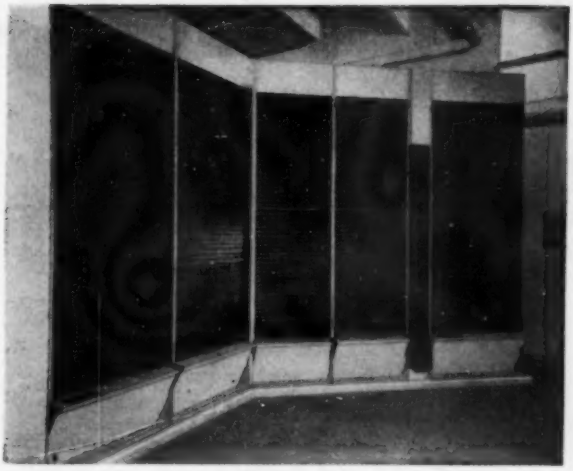

Five section MULTI-DUTY *installation of 85,000 CFM capacity.*

clean make-up air...by Multi-Duty

MAKES BETTER FINISHES!

The Multi-Duty filter, because of its automatic operation and self-cleaning feature, is ideal for furnishing clean *make-up* air for spray booths and other industrial finishing operations. With an outstanding record for reducing rejects and minimizing "do-overs", the Multi-Duty provides efficient air cleaning, as well as maintaining the constant air volumes so important to quality finishes.

The exclusive principle of overlapping panel construction in the Multi-Duty was introduced by AAF in 1927 and is still the most practical method of combining the function of self-cleaning with the operating cycle. This positive self-cleaning action minimizes the human element as a factor of satisfactory performance.

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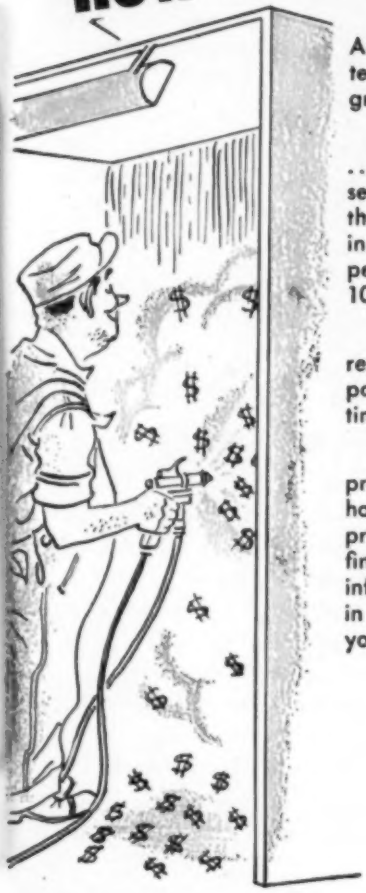
how to reduce a waste!



Are you ignoring the waste commonly encountered in spray painting? BEDE PAINT HEATERS greatly reduce this waste — and here's why.

Heating the paint greatly reduces its viscosity . . . requiring much less air for atomization. Consequently fewer paint particles are blown into the spray booth, and much less paint is wasted in overspray. Users report increases in coverage per gallon of finishing material ranging from 10 to 30% and more.

In addition, less solvent is used, since heat replaces thinner. Decided labor savings are possible because less spraying and handling time is needed.

Want more facts on how the hot spray process can bring you additional benefits? On how BEDE PAINT HEATERS can increase your production — and maintain the highest quality finish? Just write us. We'll give you *complete* information. Demonstrations can be arranged in all principal cities with no obligation on your part.

WRITE TODAY for free 8-page Bulletin and Articles giving complete information about hot spray.

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High speed production necessitates a paint that will bake out quickly and allow immediate assembly with the tape, cord, etc. It also must have good wearing qualities, holding up under constant daylight with little or no fading—and must look good to the ultimate purchaser.

These qualifications have been fulfilled by Tousey, giving evidence that . . .

Tousey Finishes Can Take It!

TOUSEY VARNISH COMPANY

520 W. 25th St., Chicago 16, Illinois

Coating Thin Sheet Metal

TO BE FORMED INTO CAPS AND CONTAINERS

Methods and problems involved in rapidly applying and drying thin protective inside linings and decorative outside coatings to sheet metal which is later machine cut and formed into bottle caps, various metal closures and small containers for food, beverages, cosmetics and chemicals.

By Charles R. Bragdon
Research Laboratories
Interchemical Corporation

MANY PEOPLE have noticed and admired the attractive finishes on crown corks, screw-caps, trays, tooth-powder and candy boxes, and other more or less intricately shaped articles made of thin sheet-metal. Some of us have also noticed the golden lining in many vegetable and meat cans.

Those finishes are nearly always applied while the metal is in flat sheet form; the blanks are afterward punched and pressed or "drawn" under tons of pressure, into their final shape. Obviously, tremendous strains are set up in the decorative film and between it and the surface of the metal. It seems astonishing that the coating remains in place; but these coatings do remain intact, not only during the forming operation but also when subjected to further severe punishment, such as sterilization in steam at high temperatures.

For some uses, they must withstand the attack of solvents and

Condensed from Interchemical Review. Volume 9, Number 3, pages 43-53 (Autumn 1950). Copyright 1950 by Interchemical Corp.

chemicals of various sorts. For others, they must be absolutely free from taste or odor.

In the United States about 90% of all cans and closures (for which in 1949 over 3½ million tons of sheet metal were used) are decorated or lined, or both. About 6½ million gallons of liquid coating materials were consumed, not to mention thousands of pounds of ink.

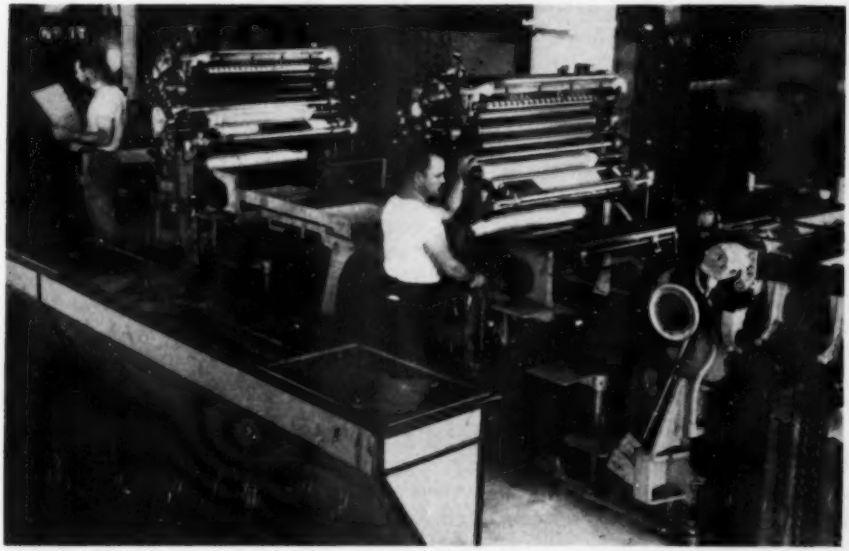
Special Coating Materials; Baking Varnishes; Enamels

The manufacture of specialized coating materials for metal decorating is itself almost a separate industry within that of organic coatings in general, and there are special meanings for the names of some of the products.

"Lacquers" for small thin metal closures and containers are almost never of the nitrocellulose type but are clear or tinted transparent baking varnishes. A "gold lacquer" is such a varnish, either originally golden-brown in color or developing that hue under heat.

"Coatings" are especially formulated pigmented enamels applied by roller-coating. They may be either dull in luster (to receive printing) or glossy, as when a plain white or color cap, etc., is wanted. "Enamel" is the name sometimes given to the transparent or translucent lining on the inside of food cans; it often contains a small amount of zinc-oxide to prevent sulfide discoloration of the food. "Size" is a clear varnish of special character, used as a first coat on sheets to promote adhesion of subsequent coatings, when the "draw" is to be severe.

An "overprint" varnish, strictly speaking, is one intended for protective application in limited areas



Lithographic presses arranged in tandem. Photograph, courtesy of Crown Cork & Seal Co.

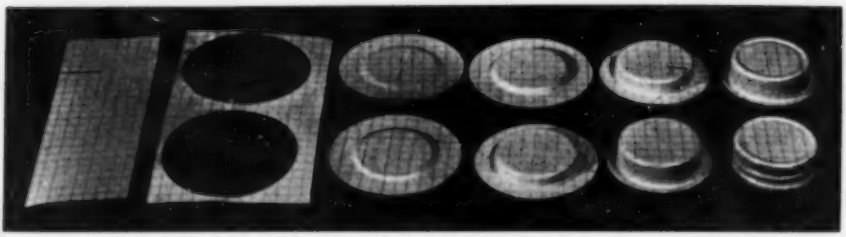


Fig. 1—A "slow-motion" demonstration of the stamping and forming performed on a sample of tinplate that was first scored with ruled scratches to form a pattern of small squares over the entire surface. Some areas of the metal are stretched while others are compressed.

by the lithographic printing process, but the term is often used for roller-coated finishing varnish.

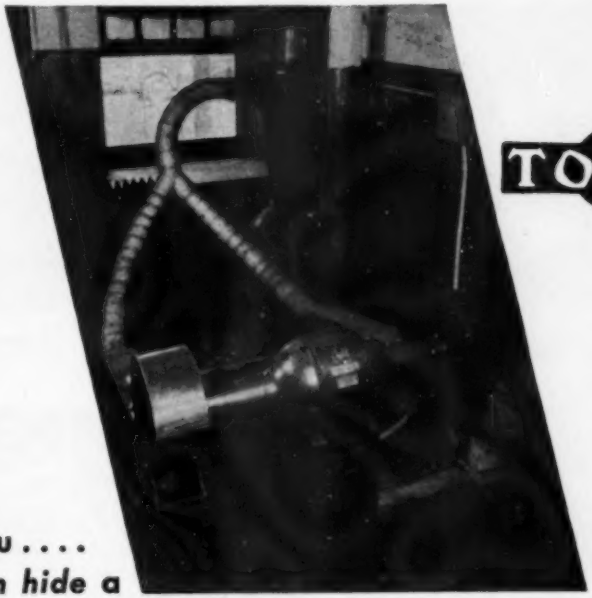
Screw Cap Forming; Coated Metal Stretched

To dramatize some of the metal decorator's problems, let's consider what happens when a screw cap is formed. Such caps are made in a range of diameters and heights, from those for small bottles, about 19-mm. in diameter and 9-mm. in height, to those for jars, 100-mm. (4-in.) or more in diameter and 15-mm. (19/32-in.) in height. Catsup caps are about 30-mm. in diameter and 17.5-mm. in height. Whenever, as on the smaller bottle caps, the ratio of height to diameter is large, the coating is greatly stretched in one direction and compressed in the other when it goes through the dies. Where the diameter is larger in proportion to height, the degree of distortion is more moderate.

In making a study recently of the "stretch" required for a 28-mm. (1-3/32-in.) capy, a "slow motion" series of pressings was made from white coated tinplate which had been scored with ruled scratches so as to form a pattern of 5/32-inch squares over the entire surface. This is shown in the illustration marked Fig. 1, Fig. 2 and Fig. 3.

The stamping press was hand-manipulated, and was stopped at a different point for each successive blank, so as to produce the series in Fig. 1, showing the progress of the dieing operation which ordinarily is completed in a fraction of a second. Fig. 2 shows more clearly the intermediate and final steps of this process.

One of the narrow-brimmed hat-shaped pieces thus formed (Fig. 2) was knurled, threaded and the brim rolled in another machine (Fig. 3). Here you see how the metal and coating have been squeezed and stretched, so that the original squares have become diamonds. Careful measurements show that, even in this mild case, the elongation down the vertical side of the cap is 50% (a stretch of from 7-mm. to 10.5-mm.) while the contraction at the base, in reducing the diameter from 46-mm. for the blank to 34-mm. for the brim before rolling, is nearly 30%. For caps with higher ratios of height to diameter, these percentages grow



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can hide a

TORIT DUST SEPARATOR

but not its ability to capture dust

Peeking around the corner, with its after-filter hidden from view, is a Torit 19-FB Dust Separator. Note, too, the special hood arrangement built to clear extruded aluminum shapes, which are pushed into the wheel hoods for polishing.

This is an excellent example of the adaptability of Torit equipment. Here both an unusual plant layout and a rather unique dust problem had to be solved. Since installation this buffing wheel has been in continuous operation and given complete satisfaction.

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TORIT MANUFACTURING CO.

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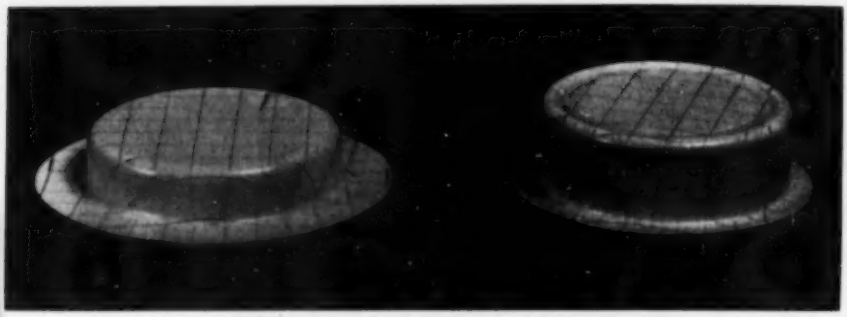


Fig. 2—Enlarged views to show more clearly the distortion of metal at two intermediate steps in the process of stamping a typical screw cap for a bottle or small metal container.

to amazing proportions. Then there are the additional distortions due to knurling, threading and rolling (see Fig. 3).

Thin Film Must Have Adherence; Flexibility

When one bears in mind that the decorative film must be hard enough to withstand the scraping and pushing action of the dies, it is difficult to conceive how it can, at the same time, have the necessary flexibility and adherence, and how it can continue to stick on after sterilization with boiling water or steam.

Other finishes, such as lacquers for the insides of seamed cans for meat and vegetables and for flat top beer cans, do not have to go through so severe a drawing process; the can body is merely bent rapidly but without appreciable distortion around a mandrel. However, the can does get a severe blow from the body-maker hammer along the edge of the lock seam. The ends of cans are strengthened by pressing low circular ridges into them. The lacquer specifications for these jobs are chiefly that they must be "sanitary" or non-toxic; must withstand, without appreciable discoloration, the heat of a soldering operation; and must resist attack by the sulfur-bearing or fatty compounds in the foods without imparting any color or off-flavor, even after a processing or sterilization treatment which sometimes lasts from one to four hours.

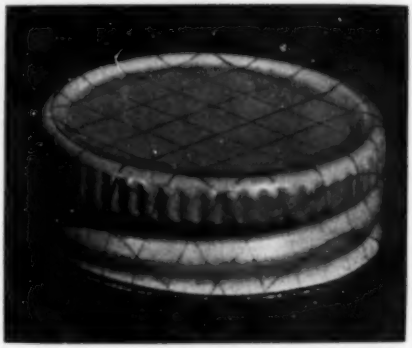
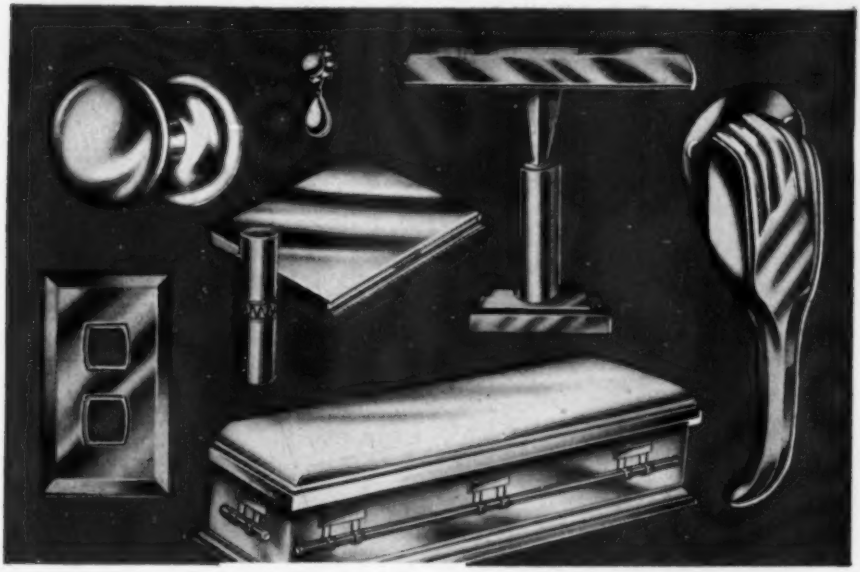


Fig. 3—The completed screw cap. Notice how the scribed squares (for demonstration only) have been forced into diamond shapes and curved lines by the distortion of the metal during forming operations.

Almost all decoration of tin plate is now done by the lithographic offset process, except for a few bulky



NOW...simulate copper, brass and bronze on products like these with M & W PLATELUSTRE

Don't let critical metals put a *needless* crimp in your production!

Take zinc or steel—apply a coating of one of the new PLATELUSTRE finishes. You wind up with products and parts that look so much like copper, brass and bronze that *the eye can scarcely tell the difference!*

Whether you have been using now unavailable copper and its alloys for *making* products or for *plating* products, you will find these new M & W finishes *equally* effective in keeping your plant running. There are types for air-drying and baking schedules—pick the one that best fits *your* production requirements.

Let an M & W Technical Service Engineer show you—*right in your own plant*—how easy these PLATELUSTRE coatings are to use, and what striking effects they produce. Or, if you prefer, write for free literature.

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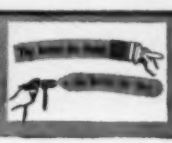


articles. The big advance in "tin" printing came with the invention of the offset process, in which a design from the printing plate is transferred first to a rubber blanket fastened around a second cylinder, and thence to the surface to be printed. Patented in 1875, this process provides a resilient material to implant the impression on the unyielding metal.

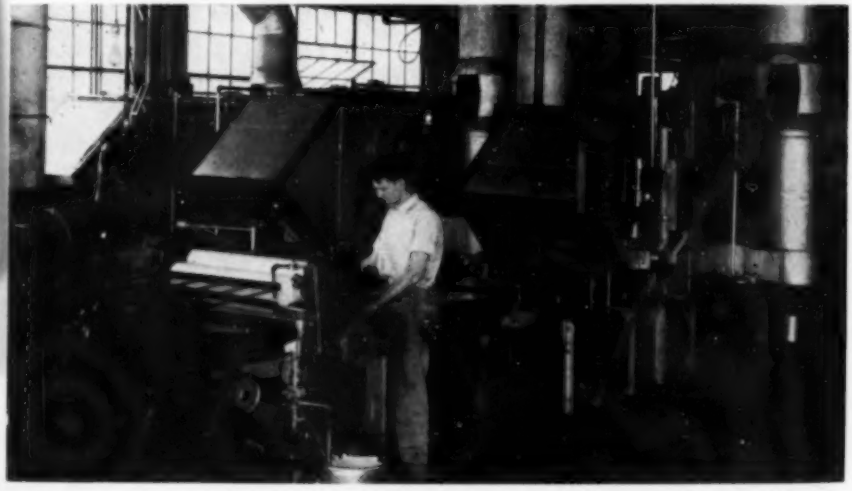
Rotary Presses; Mass Production Methods

By the end of the 19th century the offset lithographic process employing rotary presses was established on a mass production basis, and progress became more rapid. At first, inks to form the designs were usually printed directly on the thin metal surface; background coatings were a later development. Occasionally, if a solid white or other background was wanted, it was produced by one or two impressions of an ink of the desired hue. The design was then printed with inks of contrasting hue, and the final coat of varnish or "lacquer" was put on by printing or roller-coating to protect and to enhance the luster of the job.

Printed sheets, as they came from the press or the coating machine, were racked horizontally on movable racks accommodating two or three sheets side by side, and with crosswire supports or "shelves" spaced about every 1½-in. to a total height of 5½ to 6-ft. Air could circulate over the sheets, for evaporation of solvent and drying of inks or varnishes. Air-drying was gradually replaced by oven baking.

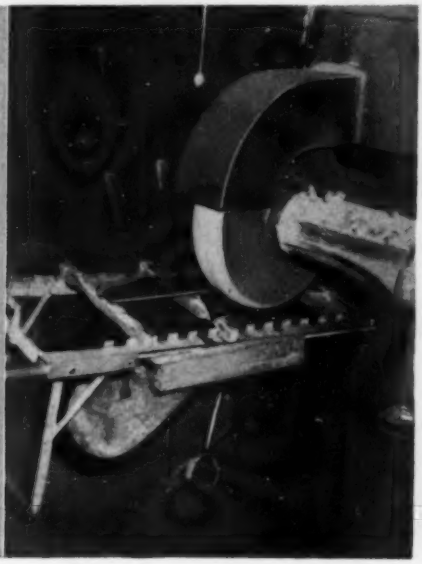
Then firms supplying litho inks began, for their own protection, to make properly engineered varnishes and coatings, to replace the ordi-

(Continued on page 40)



Feeder, coating machine and entrance to ovens. Photo, courtesy of Continental Can Co.

ALOXITE TPT GRAIN



for high stock removal

Do you find it necessary to remove comparatively large amounts of metal in polishing a certain type of product? Agricultural implements, for example *(as illustrated.)*

ALOXITE TPT aluminum oxide grain by CARBORUNDUM has been specially developed for this service. ALOXITE TPT is a sharp, extremely tough fused aluminum oxide polishing grain with a clean cutting action that reduces finishing time...increases production efficiency and economy. See your CARBORUNDUM representative, or write *today* for illustrated booklet giving full details.

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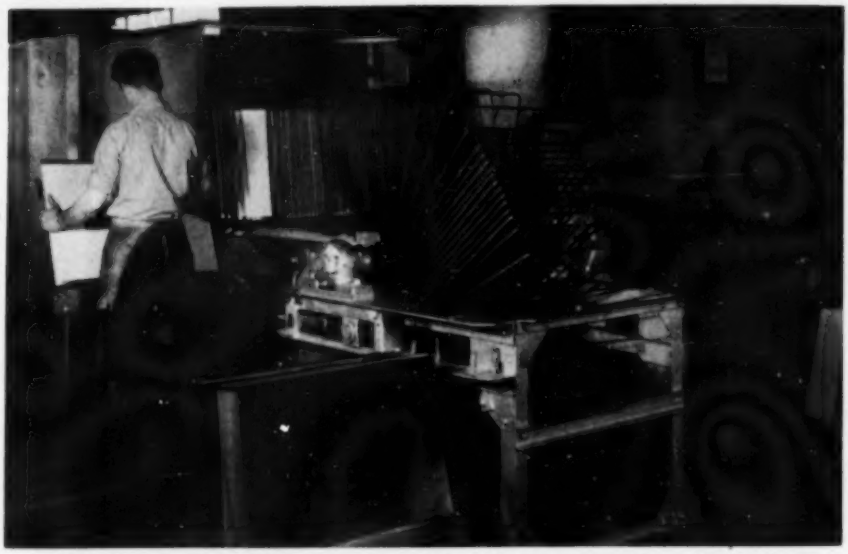

Exit end of oven in which coatings have been baked. Photo, courtesy of Continental Can Co.

nary grades which the lithographers had been buying in paint stores. The latter often gave poor results which were wrongly blamed on inks.

Conveyorized Ovens; Fast-Dry Coatings

The introduction of continuous conveyor ovens challenged the varnish and ink companies to make tougher, paler, faster-drying finishes and inks to meet shortened schedules. This meant a revolution in formulation as well as in the system of plant operation.

In the modern system, mechanical aids largely replace hand labor. Not only is the time in process tremendously reduced; there is also the great advantage that each sheet gets exactly the same treatment. The sequence of operations varies; a typical sequence follows:

Gold Lacquer on Back; Sizing Varnish on Face

The sheets, received from the mill with a thin protective film of oil, are only rarely put through a preliminary cleaning to remove it. If the "draw" is to be severe a special grade of deep-drawing steel is used, whether or not it has a hot-dipped or electro-plated tin coating.

Heavy piles of sheets are placed under an automatic feeder; vacuum cups pick up one sheet at a time and start it on its way through the coating machine. This first application may often be a gold lacquer on the back of the sheet; on the face, the first coat is frequently a clear sizing varnish which, as mentioned before, aids the adhesion of many of the intricate finishes now used in deep drawing operations.

(Continued on page 42)

Sicon

Formerly MICO

Silicone-Base High Heat-Resistant Finish

PROTECTS THIS PRODUCT AGAINST TEMPERATURES OF 870° (F.)

The interior parts of this miniature inferno are SICON-coated.

☆ It takes an unusual finish to withstand the constant high heat generated by the combustion chamber of the Superflame Floor Furnace, made by the Queen Stove Works, Inc. Yes, SICON lengthens the life of this unit because it does not break down like ordinary finishes due to its amazing stability under high heat. SICON is the first commercially priced silicone base finish that can be applied by brush, spray or dip and which either air dries or adapts itself to any existing force drying system.

Write for data.

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MIDLAND Industrial Finishes

Waukegan, Ill.

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Roller Coating Machine Applies Uniform Film

A roller coating machine is the economical means of application for liquid lacquers, enamels and varnishes which are to cover the entire surface of the sheet. Its essential parts are two rollers (the "coating" and the "impression" roller) between which as many as 4200 sheets are passed per hour.

Coating material is picked up from a trough-like fountain by a feed roller which transfers it to a distribution roller. The latter keeps the soft-surfaced upper or "coating roller" uniformly covered with coating material. The lower or impression roller is of steel; a steel scraper in contact with it strips its surface of any adhering liquid just before it comes into contact with the back of the metal sheet, so that material is applied on only the upper side.

Oven Drying; Then Rapid Cooling

From the coating machine, each sheet rides on tapes into the space between two wire supports or wickets carried by links of a continuous conveyor chain. The wicket underneath quickly tilts it to nearly vertical position, in which it passes through the oven. At the exit end of the oven is a cooling zone, where the sheets meet a blast of cold air; and also a stripping zone where one man (or an automatic device) can pull off the sheets as they emerge and stack them on pallets. At this point the coating must be perfectly dry and hard enough to stand the weight of the pile without off-setting or marring.

The process may be exactly repeated for the application and baking of a pigmented background coating, after which the sheets go to a lithographic press and oven for printing and baking the color design.

Multi-Color Decorations; Clear Finishing Varnish

Some times presses are placed in tandem, each printing with one or two colors, so arranged that the successive inks will not smear those previously printed; then one trip through an oven dries the inks printed by both machines.

Since ink films are much thinner than other coatings, the required baking time is less, but the maximum heat may be considerably higher. The oven is similar in all respects except length. After the required number of ink impressions a final film of clear finishing varnish is almost always put on and baked.

Many plants are now taking advantage of the recent development of "Elixirin"* inks and varnishes, which permit applying the coat of finishing varnish directly over the final unbaked impression, with no loss of its luster and brilliance. The coating machine may then be set in tandem with the press so the ink is really wet when the varnish goes over it, and the two are baked together.

For several years lithographic decoration has been successfully applied to such fairly heavy sheet steel as that used to make 5-gallon paint pails, etc. Only within the past year has anyone been rash enough to try to decorate 18-gage

*Trade mark of Interchemical Corporation.

The experience of Watson-Standard Laboratories in the field of decorative and functional coatings for the Metal Lithographer has been widely recognized.

Their accomplishments include the development of such outstanding finishes as Wet Print Varnishes, Base Whites, Quick Bake Finishes, Gold Lacquers and Blacker Litho Blacks.

These finishes are available in vinyl as well as conventional types.

These are not of standardized formula but are prescription compounded to fulfill the needs of each individual application. The services of our laboratory and field technicians are available to you without obligation. Let us help you with your problem.

Write today.

WATSON-STANDARD CO.
225 Galveston Ave. Pittsburgh 30, Pa.
NEW YORK OFFICE 15 Park Row New York 7, N. Y.
CHICAGO OFFICE 55 E. Washington St. Chicago 2, Ill.

sheets, as wide as 70-in. for 55-gallon drums. Such drums, not only brightly lithographed outside in the color scheme of the user, but coated inside with a lining resistant to chemicals, have recently been advertised.

Now we have the finished decorated metal sheets, each with anywhere from one to eight or more successive applications of decorative and protective materials. The first of these (perhaps gold lacquer on the back for protection against corrosion and chemical attack, as well as for pleasing appearance) may have had to undergo not only its own baking process, but several subsequent ones, each making it harder and less flexible—but it must still be capable of going through whatever forming operations are necessary before the final product is ready for use.

Severe Punishment Tests Film Resistance

If the final product is a screw cap or bottle crown, the flat sheet may carry from perhaps 20 to as many as 500 identical round reproductions of the design, depending on the latter's diameter. The sheet, whether or not it is first slit into narrower pieces, is fed into a powerful stamping machine which cuts out the circular blanks and immediately presses them into the desired shape. Further forming operations (such as knurling, threading, rolling the brim) and insertion of cork, paper or plastic liner, follow as stampings pass along the assembly line through a sequence of appropriate machines.

One of the severest punishments the decoration receives is the churning around (in feed-hoppers of these machines) of thousands of semi-finished caps, crowns, or other articles, which at certain stages have sharp edges. Finally the article goes to the customer—provided it meets the exacting tests to prove that adhesion, flexibility, good looks and protective quality have not suffered from all of these operations.

Some of the requirements inherent in properly constructed inks and finishing materials for metal decorating can be appreciated from this description; others may not be so apparent. It is essential that the films dry thoroughly in the short time they go through an oven. They must not discolor or lose their toughness and adhesion during several subsequent trips, nor become so case-hardened that they will not accept later materials. Another strain on flexibility is the frequent practice of storing coated sheets for as long as six months before they are formed.

Both the inks and the coating materials must flow quickly, so as to level out the fine hillocks left by the press, and the ridges which inevitably form during coating-machine application. This leveling must occur within the few seconds elapsing from the instant of leaving the rollers to entrance into the hot zone of the oven. Solvents must not only be non-toxic, but must not "smoke" nor form explosive mixtures with air in the oven, especially where direct gas heat is used.

While the sheets are often lubricated with wax or oil before being stamped, there are available special types of coatings and varnishes which are self-lubricating (and at

FINISHES

manufactured to GOVERNMENT SPECIFICATIONS

Our vital services to industry include the manufacture of quality finishes and lacquers for wood and metal surfaces to meet U. S. government specifications on defense orders, as well as your own rigid requirements for civilian products. May we send you full details?

CPL

COAST Paint & Lacquer Co. Inc.

P. O. BOX 1113, HOUSTON 1, TEXAS

the same time more scratch-resistant) and which in many cases can be fed directly to the forming dies.

Coatings Must Meet Rigid Tests for Performance

The thickness of dried pigmented coatings customarily laid by coating machines ranges from about 0.4 to 0.6 mils (thousandths of an inch). This is considerably less than the usual film of paint or enamel for other applications. All of which means that if a solid color is to be obtained in one coat, the hiding power must be unusually high. Films of clear lacquer and varnish are even thinner (about 0.25 mil) and for uniformity of color and general performance the thickness of film must be held within close tolerances.

The question of whether materials used on or in food containers are free from toxicity hazards and from any tendency to impart taste or odor is important. All compounds known to have the slightest poisonous character are carefully avoided. The materials now used must also go through a meticulous screening to make sure they have no flavor-imparting property. They are carefully studied, first in the laboratory, then on a small commercial scale; these tests may require several months for completion.

May Be Years Before Coating Gets Final OK

Success in one such commercial test does not always lead to immediate adoption of the coating. A broader evaluation may be needed during the next packing season. Thus it may take two or three years before the formula receives a final okay. The chance that a few dollars' worth of unsatisfactory sanitary lacquer may ruin thousands of dollars worth of canned foods is too great for any manufacturer to take without exercising strict care at every step.

Coated Linings for Various Metal Containers

From the development of special inside enamels for food cans, etc., it was not too great a step to that of linings for metal cans, kits and drums to resist turpentine and other solvents and corrosive chemicals of various sorts, and to prevent both contamination of the packaged product and deterioration of the container. Formerly such resistance was accomplished more or less satisfactorily for certain products by applying a heavy inside coating of pure tin, but the scarcity and high price of this metal has stimulated search for suitable organic coatings. While freedom from flavor and resistance to sterilization are seldom needed by linings of this sort, the demands of chemical resistance are frequently even harder to meet.

In all this work the newer scientific advances in copolymer resins, chemically reconstituted oils, and other synthetic materials have come fully into play and the industry is constantly finding new ways to provide better protection and more attractive decoration than ever before. Its progress is apparent in the ever-increasing volume of lined and decorated metal containers and closures that are meeting daily acceptance and use.

NON-INJURIOUS **ELECTRO** NON-INFLAMMABLE

COLD STRIPPER

FASTEST *in Action* **LOWEST** *in Price*

WRITE FOR TESTING SAMPLE OR ORDER
5-GALLONS AT DRUM PRICE

Specify whether dip or brush type is desired

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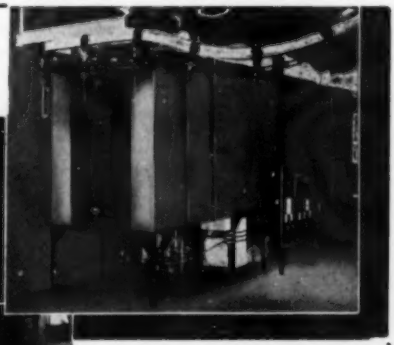
LANLY CONVEYORIZED OVEN



THE LANLY CO. 760 Prospect Ave. CLEVELAND, OHIO

Lanly experience embraces the designing of many such ovens for a large variety of purposes.

A letter or phone call will make our counsel available without obligation. Write for literature.

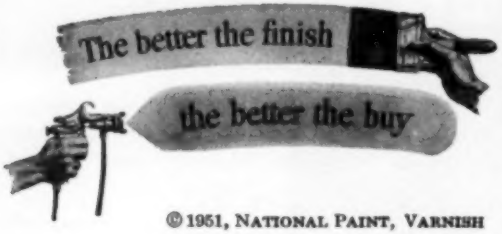
There may be a better way

Consult an Industrial Finishes Specialist

Are you shifting to defense production? Looking for ways to speed up manufacturing, lower production costs, or to increase the quality of your finished products? Call an Industrial Finishes Specialist. A better way to apply your finishes may be the answer.

Here are some of the basic finishing methods in use today. Each method is adaptable to a wide range of products. You may find the answer to your finishing problem here.

Remember, even in these days of mobilization, *more and more of your customers start buying with the finish in mind.*



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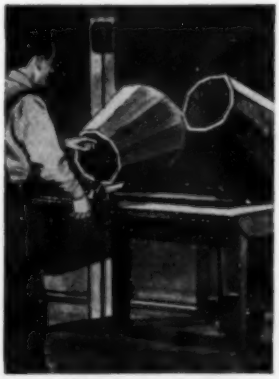
Spray painting—Can be set up for automatic or manual operation and will efficiently handle all types of finishes on all but the smallest objects.



Tumbling—Small wood, metal or plastic parts are finished in batches with a minimum of handling. Inexpensive, and tumbling barrels take little floor space.

to apply your finishes

Electrostatic spraying—Used for metal finishing in automatic spray booths. Eliminates overspray as finish particles are magnetically attracted to the metal.

Hot lacquer spraying—Gives improved coverage with one application as heavier-bodied lacquers with a higher percent solid can be used. Gaining increasing acceptance in furniture or wood finishing.

Steam spraying—Gives very even application. Can be used manually, but especially adaptable to automatic spray booth operation.

Dipping—Often the most economical method. Can be set up for manual or automatic operation.

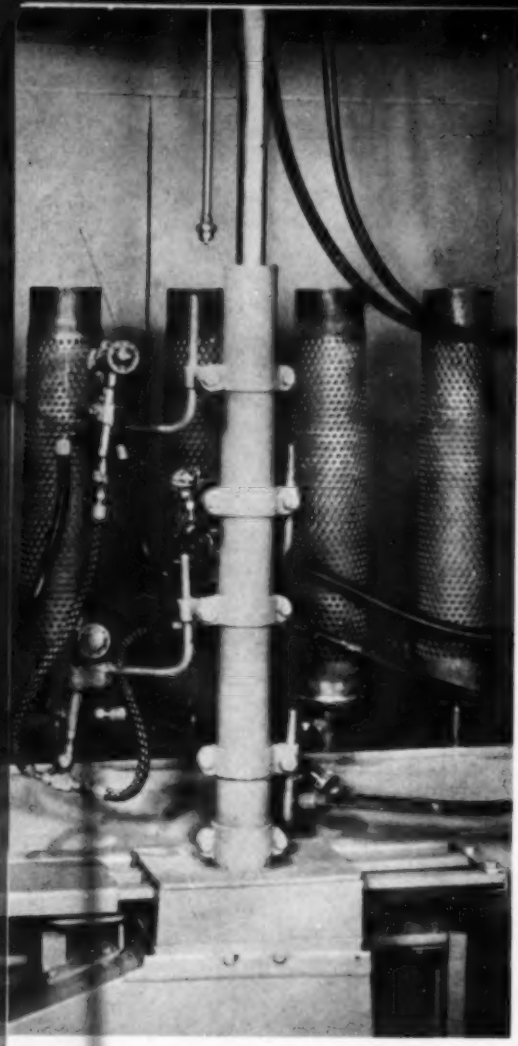
Dip whirling—Same as the dip method, except that excess finish is whirled off by centrifugal force. Only used for very small parts.

Roller coating—Economical high-speed method for applying protective coatings to large, flat and thin objects. Widely used for metals, fabrics, wood and paper.

Automatic

By P. C. BARDIN
Associate Editor

(PART III)



Automatic aircoating and drying unit with rotating spindles at 4-in. centers on heavy roller chain. It is designed and built to automatically coat and force dry exterior and interior, (except primer hole) of 57-mm., 75-mm. and 105-mm. shell cases. Has water-wash booth, exhaust unit, water circulating pump, dual section oven to provide preheat temperature of 200° F. and bake temperature of 365° F., force cooling tunnel, selector skip-spray mechanism, horizontal vertical oscillating gun mounting, etc. Photo, courtesy of Paasche Airbrush Co.

THE ROTATING-TABLE type of machines for spray painting products automatically are made in a wide variety of sizes, and are used for painting many different products. In this type of machine the outer edge of the table serves as the conveyor which carries the work through a spray ing zone. Machines of this type, made by various manufacturers, have table diameters ranging from 24-in. to 84-in. and may have anywhere from four to 48 upright spindles spaced equidistantly around the table rim. One rotating-table machine, used for spraying multicolors through precision masks, has a table 8-ft. in diameter with 24 work holders.

Revolving Round Table; Variety of Sizes

The table on this type of machine is usually at or near a convenient work bench height. The hollow spindles of work holders slip over the upright pins or spindles located near the outer edge of the table top. The object to be coated is placed on a work holder and, as the table revolves, it is carried

Spray Painting . . . .

In this installment a number of rotary-table types of automatic spray painting machines are pictured and described. Other special purpose machines include those that have automatic or semi-automatic masking; still other machines spray both adhesive and flock.

through the spraying zone. Within this spraying zone the object is revolved on the upright spindle in the same manner as on the vertical-spindle machines described previously. Many of these machines have a skip-spray device to prevent the guns from opening up if or when an empty spindle moves into the spraying zone.

The gun carriage will hold from one to four or even six spray guns.

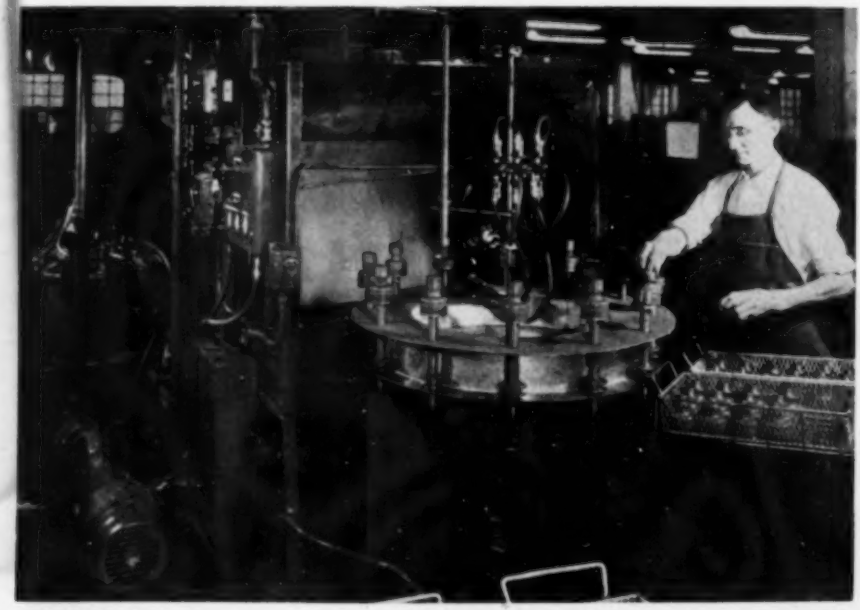
(Continued on page 52)

This machine automatically spray paints a variety of parts in three colors, one color after another. Painting is done from underneath. Photograph, courtesy Conforming Matrix Corp.

It has considerable latitude for adjustment as to the position of the guns, making it possible to quickly and thoroughly coat parts or products that pass through the spraying zones. In some machines the gun carriage is stationary; in others the spray guns follow the work. This type of automatic spray machine is not adapted for coating the interior surfaces of objects, with the exception of those that may be coated by puff-spray, that is, where the nozzle of the gun does not enter the interior of the object.

Most models have a built-in water spray booth; however, one portable model may be placed inside an ordinary standard dry or water-wash spray booth.

These revolving table machines are capable of high speed production on certain classes of products. The items to be coated must not be too large or too heavy, and the coating material must be exceptionally fast drying; if it is not, the work being coated should be capable of being easily transferred from the work holder for air drying, force drying or baking. Also, any object having an area that will be subsequently hidden, so that the operator's finger marks will not detract

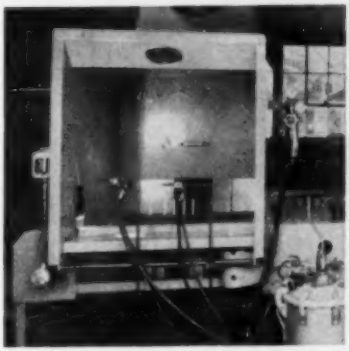


A special automatic rotary machine spraying distributor housings with red tractor paint. This machine has a production speed of from approximately 360 to 720 pieces per hour. Work holders consist of 12 spindles equally spaced around a 36-in. diameter circle. Four spray guns coat all surfaces. Work is removed from the machine while the paint is still wet. The booth is fitted with explosion-proof electrical controls. This setup is in one of the International Harvester plants. Photograph, courtesy of The DeVilbiss Co.

for volume finishing of parts—use the

CAPITOL HIGH SPEED ELECTRIC SPRAY-BAKE CONVEYOR MACHINE

It will accommodate pieces of from less than 1-in. diameter to over 12-in. diameter, which require a high quality finish, such as lipsticks, clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electric strip-heated bake oven from which they emerge for a cooling period before being removed.



View of booth showing automatic spray guns—lower view shows conveyor arrangement and drying and baking compartments.

This makes for speedy, high quality production, and effects exceptional savings in the coating of pieces of various sizes and shapes that are ordinarily difficult to handle economically. Let us make a test run of your own work samples—no obligation.

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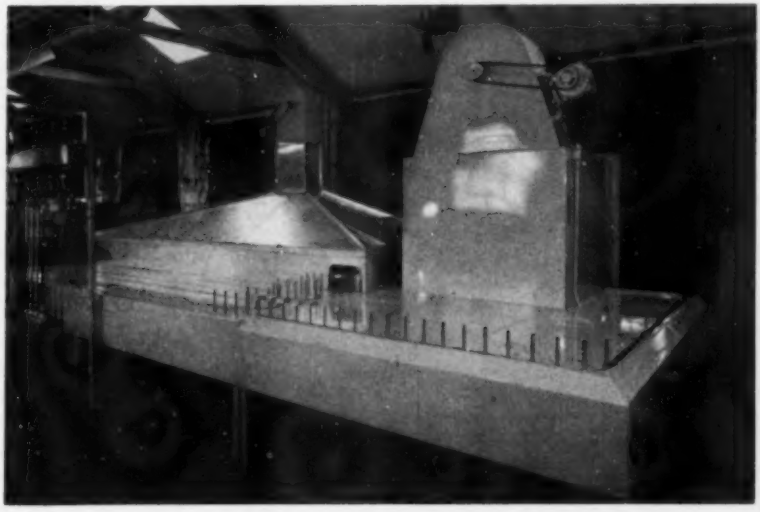

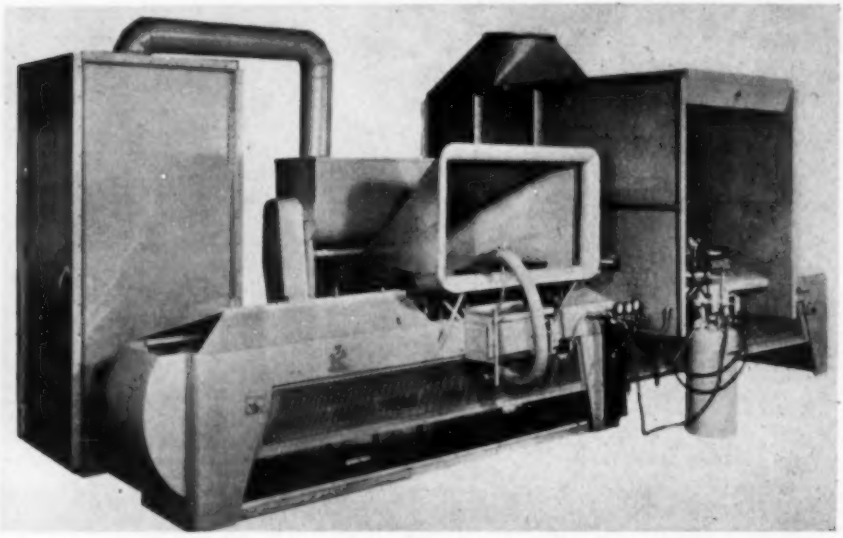

This air-conditioned automatic coating machine sprays phonograph turntables and other parts with adhesive and then sprays the adhesive-coated surfaces with flock as the work, mounted on work-holders, moves along by chain conveyor. Included are a water wash spray booth, a flock recirculating booth with supply hopper, agitator and circulating flock tube and flock dispenser, explosion-proof motor, etc. Photograph, courtesy of Paasche Airbrush Co.

from the finish, could be coated on this type of machine.

Due to the speed of the table and the relatively short distance available for an oven, baking the finish on this type of machine is seldom if ever practical. However, there are models equipped with a series of infra-red lamps to force dry the finish so that the coated objects may be handled more readily.

Special Purpose Machines for Automatic Spraying

Special purpose machines for spraying paint automatically are available in considerable variety. Practically every machine that is sold is engineered and designed for coating a specific group of objects. Most manufacturers of spray painting equipment use combinations of their standard equipment to produce a spray machine that will perform the work required. Obviously when standard units can be combined to make a special purpose machine there is less delay in making the machine available to the user and less cost involved than if the machine had to be designed and built of all special units and parts.

One type of special purpose machine is designed to spray a coating of flock on certain products automatically. It is a machine with traveling vertical spindles and has a built-in water-wash spray booth in which the adhesive is sprayed on the revolving objects. Close be-

CUT SPRAY PAINTING COT on many defense items

such as the shells and rocket bombs illustrated, by sharply increasing production through the use of

ELECTRO-FORMED METAL MASKS

(Made by patented process)

Designed to fit into your conveyorized equipment.

We also design, engineer and build

COMPLETE AUTOMATIC SPRAY EQUIPMENT

(with or without masks)

MASK WASHING EQUIPMENT and AIR OPERATED CLAMPS, FIXTURES AND TOOLS for . . .

positioning parts in masks while painting or holding parts in place for other operations, such as welding.

Plug-type masks for keeping depressed areas clear, while spraying background; lip-type masks for protecting the background while painting depressed areas and block cutout plane surface type masks.

Clean, sharply defined letters and decorative effects are obtained on intricate die castings, stampings and plastic forms by accurate control of painted areas with no fogged edges. After wiping or buffing off of overspray is unnecessary.

The "loose" inside of letters and numerals, such as "0" and "6", is held in position by arched bridging to eliminate objectionable "ties."

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Please send, without obligation, details on ( ) Hand masks; ( ) Mechanical masking fixtures; ( ) Air-operated masking fixtures; ( ) Stationary automatic spray painting masking machines; ( ) Rotary table automatic spray painting masking machines; ( ) Quotation on masks for parts (or prints) which I am forwarding.

Name.....**Firm**.....

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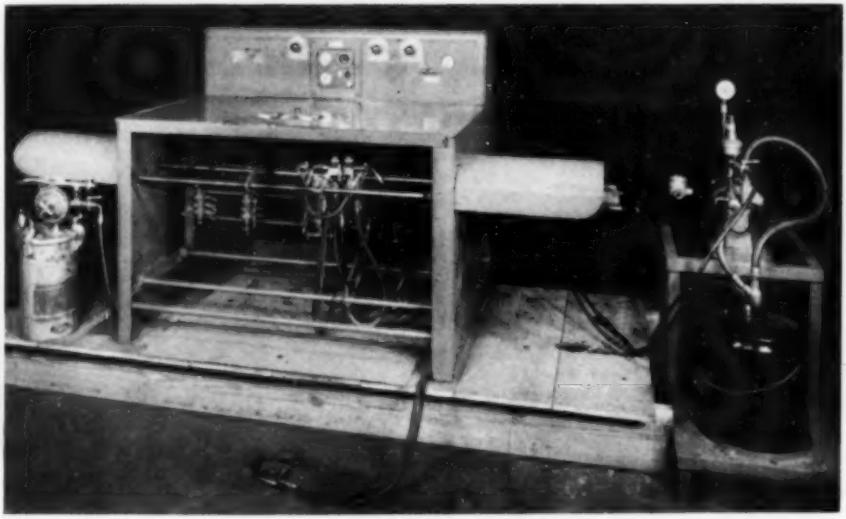
side the adhesive booth is the flock booth where flock fibers are blown onto the wet adhesive as the parts revolve. The machine has a flock reclaiming chamber from which all salvaged overspray of flock is drawn and again blown onto the surfaces being coated. An infra-red electric oven may be used to force dry the flock coated surfaces.

Masking the Product for Automatic Spraying

Masking some part of each product is sometimes necessary before any spray painting is done. In the case of war material such as shell cases, bombs, grenades, rocket tubes, etc., letters, numbers, insignia and sometimes color is required for identification. For civilian goods such as automobile trim, name plates, toys, etc., masking the object is necessary for the application of one or more colors for purely decorative effects.

Masking the product for automatic spraying is entirely possible. Let us consider masking of war materiel. For protective masking to keep paint off certain places such as threads, areas for electrical contacts, etc., sometimes the work holder, on which the object is coated, can be made to protect this section. In others, such as rocket tubes, for



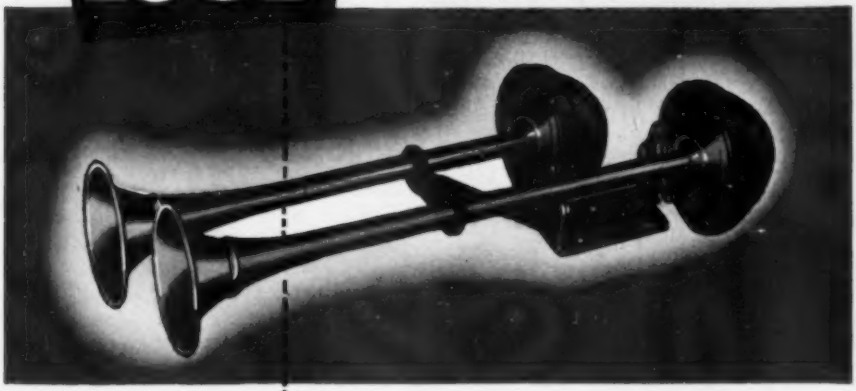
This machine will paint items up to 16-in. in length. The guns move for painting and the part and masks are stationary. It is entirely pneumatic and hydraulically controlled; comes equipped with an air filter, automatic moisture trap, eight automatic paint guns, hose, fittings, pressure tanks and paint circulating system.

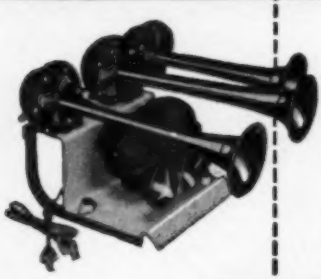
Three dials on the control panel operate: 1) The length of time needed for loading or inserting parts into masks. 2) The amount of paint to be applied, or length of time the guns are on. 3) The speed which the guns travel in the machine while painting.

Parts to be painted are loaded into mask insert plate two at a time. The paint cycle is automatically controlled by operator. Photograph, courtesy of Conforming Matrix Corp.

LOUD .. but not gaudy

HOW GLIDDEN FINISHES HELPED BOOST HORN SALES





Color plus quality and texture of finish, carefully chosen for horns and their display stands, enabled a manufacturer to increase sales in a highly competitive market.

Similar opportunities are available to others through the use of Glidden industrial color styling, Technical Services and finishes.

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QUALITY Glidden PRODUCTS

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example, the metal collar on which the tube rolls, protects the threads from damage as well as from being coated by spraying. For bazooka shells there is a precision mask which is held in correct position by spring clips. For shell cases I have seen masks with interchangeable numbers, insignia, etc.

Other masks are made wherein the two halves are held together on the object by magnetic force. All of these may be used on automatic spray painting machines. Then there are air-controlled precision masks such as shown in the accompanying picture where five different colors may be applied as the object travels along on the vertical spindle machine. In this case the mask is automatically clamped over the object and held tightly in place by air pressure.

Most of these masks may be used in connection with any automatic spray machine, with perhaps some modification, excepting the transverse reciprocating machine, both horizontal and vertical. For flat or slightly curved sheets, masking is generally accomplished by applying pressure sensitive tape (masking tape) which is produced in various width rolls or in die cut shapes. Masking tapes that will withstand baking temperatures are now available.

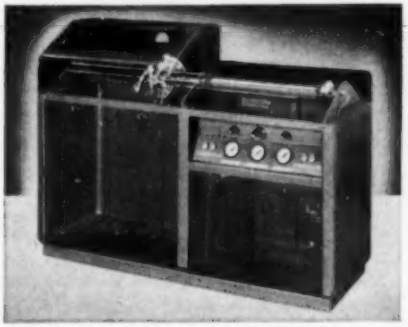
Pressure Sensitive Tape; Precision Masks Too

Also available is an air-operated, hydraulically controlled rotating table machine specifically designed for color masking. The 8-ft. diameter table has 24 work holders with air-operated clamps to hold each object firmly in the precision mask. The spray guns operate automatically beneath the table, spraying against the mask. The table indexes eight times per revolution.

In one type of automatic spray-mask painting machine, adjustable traveling spray guns are inside a cabinet, and pointed upward toward a rectangular opening in which is clamped a mask to receive one or more parts or products to be spray painted. Interchangeable masks can be used.

This machine mechanically and automatically applies color finishes and decorative designs to metal stampings, plastic products, die castings, and similar products and parts at production line speed.

Decorative name plates, escutcheons, counter displays and others that are to be finished in more than



Work to be painted is pressed against a spray mask semi-permanently installed in the spray opening at the upper left. Operator presses a pedal valve that activates spray cycle. Within the machine two automatic spray guns travel parallel to the surface being painted.

Except for a suitable exhaust duct, air line connection and paint supply, the unit is entirely self contained. All overspray and fumes are confined within the machine. Photograph, courtesy of Sepanski & Associates.

Peak PRODUCTION

Peak production can be obtained with FINISHING EQUIPMENT DESIGNED FOR YOUR PRODUCT . . . . SUITED TO YOUR BUILDING . . . . AND GEARED TO YOUR PRODUCTION . . . .

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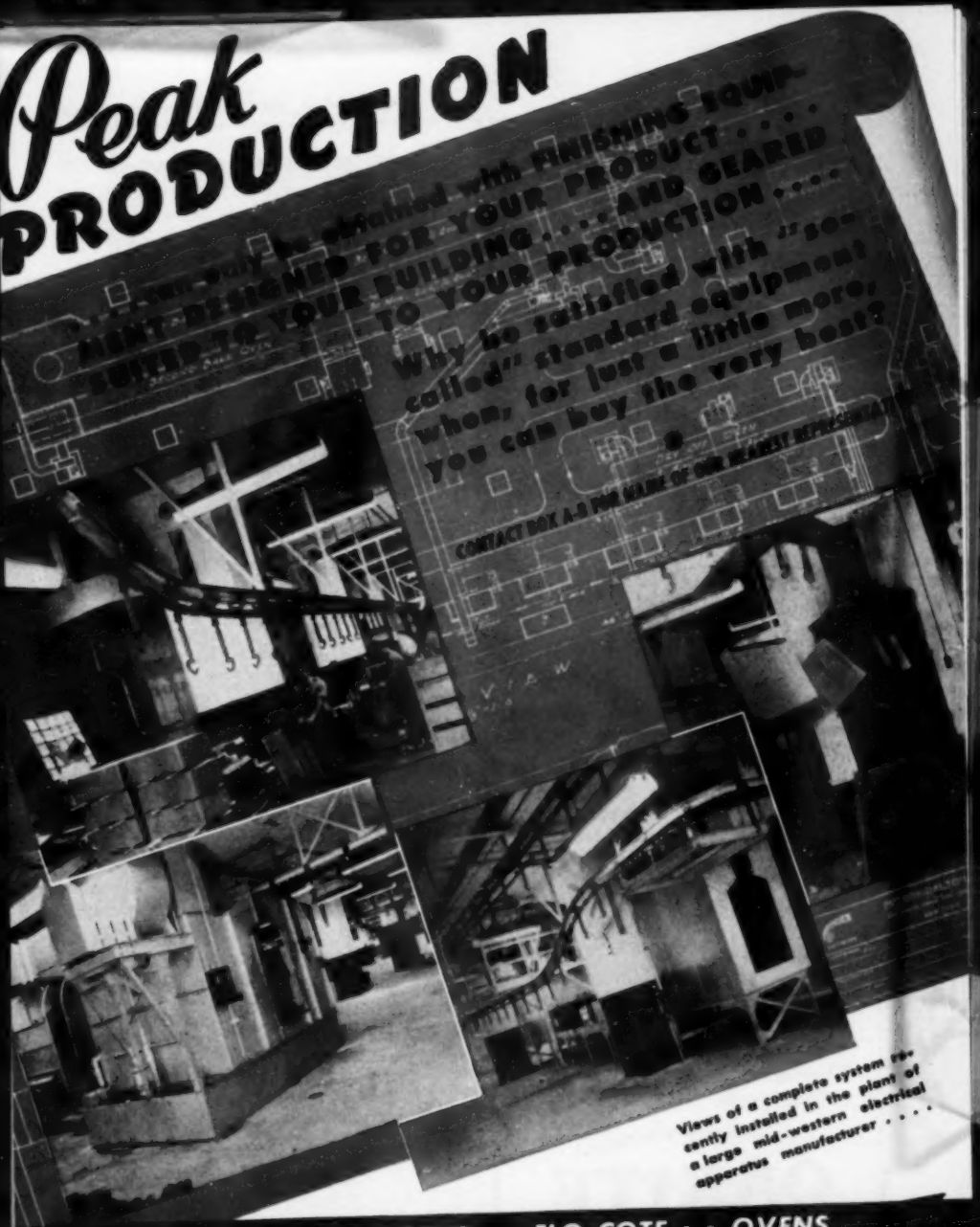

Views of a complete system recently installed in the plant of a large mid-western electrical apparatus manufacturer . . . .

WASHERS . . SPRAY BOOTHS . . FLO-COTE . . OVENS

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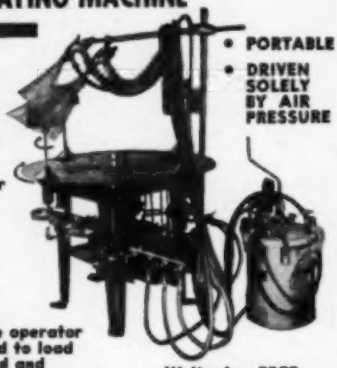
HOLLAND
automatic-pneumatic.
SPRAYING MACHINE



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one color, even though one of the colors is a very simple operation and the others involve intricate angles, depressions or raised portions that have to be covered uniformly, are handled with equal ease and at the same speed of production by this machine.

Work to be painted is manually pressed against the spray mask which is semi-permanently installed in the spray opening. The operator then presses a pedal valve that activates the spray cycle.

Within the machine, pneumatic power moves two automatic spray guns along a track parallel to the surface being painted, to apply an even coating.

Both the length of the stroke and the speed of its operation can be accurately controlled to provide any kind of coating desired.

Due to the wide variety of automatic spray machines now on the market, their flexibility, plus the ability of the manufacturers of these machines to combine standard units for special purposes, there are practically no products that cannot be finished automatically at a saving in man power, as well as a saving in cost and time—provided the potential volume is sufficiently large to warrant the investment.

The next installment of this article, to appear in June issue, will take up Electrostatic Spray Painting.

Acknowledgment: Information and photographs for use in this series of articles were supplied through courtesy and cooperation of these firms: Binks Mfg. Co., Capitol Machine Co., Conforming Matrix Co., DeVilbiss Co., J. Holland & Sons., Inc., Paasche Airbrush Co., Sepanski & Associates.

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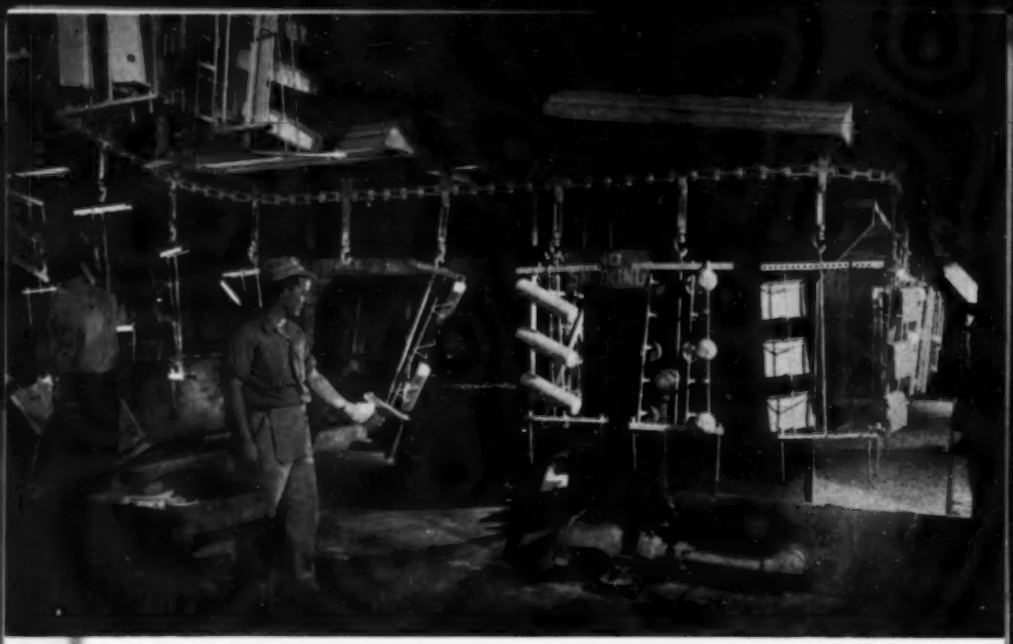


Wrinkle Finishing

By E. B. SPERRY
Assistant Chief Engineer
Moe Light, Incorporated

LIGHTING fixtures and lamps for the home are generally finished in light pastel colors. They must be attractive in design and finish, and satisfactory in service. Women buy or make their influence felt in the purchase of these articles at retail outlets, therefore it is necessary for the manufacturer to be attentive to details. This means that, for instance, on a high grade bed lamp fixture finished in light cream color wrinkle enamel, the color must be consistently uniform and the wrinkle pattern extremely fine textured.

What Controls the Quality Of Wrinkle Finish

Several factors contribute to the quality and uniformity of this type of finish. Among them are formulation of the wrinkle enamel, and uniformity of procedure, baking time and temperature. Perhaps each one is as important as the other.

Fixtures leaving spray booth (at extreme right) and travel to left are inspected under fluorescent lights before they [illegible] A-type bake oven at left.

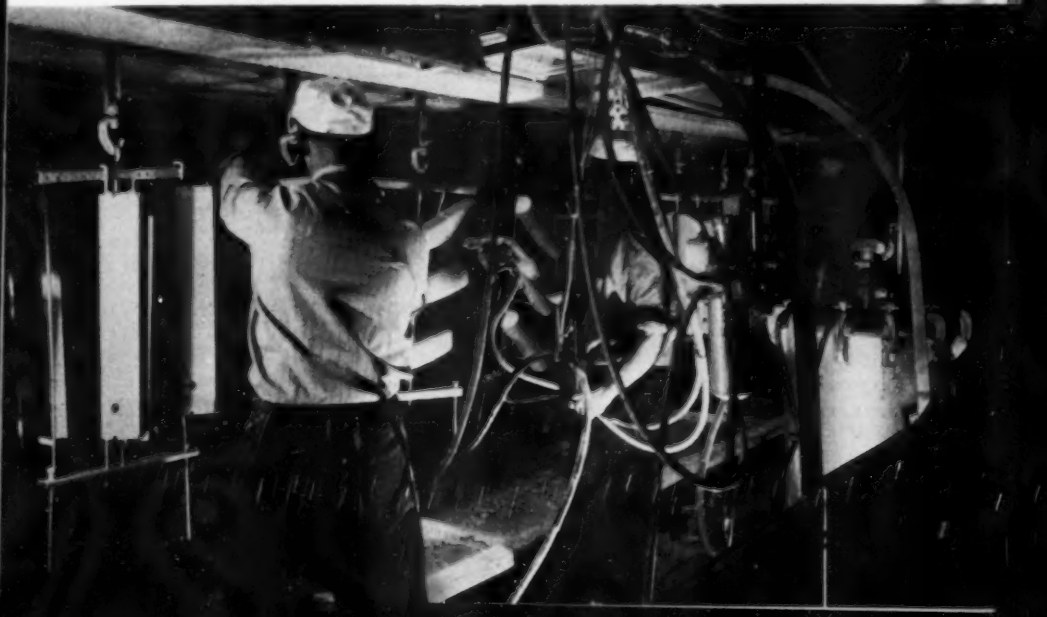
Our supplier has worked out a formulated material which, under prescribed conditions, gives us the exact color and pattern of wrinkle we want. This formulation is strictly adhered to. As a result, by keeping our conditions and production procedure uniform, we are assured that the finish we put on today will be the same in color and pattern as it was a year ago or a year from now —that is, if we want it that way. This is the supplier's responsibility

Our part of the job is to see that the conveyor speed, atomizing and fluid pressures, and oven temperature remain constant. The volume of fresh air brought into the bake oven must be controlled with exactness, for any appreciable variation in the amount of fresh air entering the oven will cause a slight difference in the color of the finish.

The entire finishing room is pressurized so that dust and flying par-

Modern Lighting Fixtures

Spraying white synthetic enamel on inside of reflectors and wrinkle enamel on all outside surfaces. The entire spray room is pressurized, therefore the spray booth is not enclosed.



ticles are eliminated. These controls are our responsibility. Combine these mechanical controls with uniformity of material and spraying procedure, the result is a uniformly satisfactory finish.

Foundation of Quality is Surface Preparation

The metal surfaces of all fixtures are cleaned and prepared for enamel coating in a 5-stage metal washer. Fixtures are hung on racks which are suspended from hangers attached to an overhead monorail conveyor. This conveyor is driven through a variable-speed drive at 5½-ft. per minute.

In the first stage of the metal washer the fixtures are sprayed from four sides with an alkali and emulsion solution at 155° F. This is followed by a hot water rinse at 130° F. In the third stage parts are sprayed with a rustproofing solution, followed by a cold water rinse. In the last stage a mild chromic acid rinse is applied at 150° F. Leaving the metal washer, the fixtures pass through a dry-off oven where they are subjected to a heat of 400° F. for three minutes.

Wrinkle Enamel is Sprayed and Baked

Upon leaving the dry-off oven, the hot dry fixtures travel for ten minutes to cool before they enter the first of two water curtain spray booths. In the first spray booth the inside surfaces of reflectors for lamps are spray coated with white synthetic enamel. In the second booth the outside surfaces are sprayed with light cream colored wrinkle enamel, using an atomizing pressure of 70-lbs., and a fluid pressure of 15-lbs.

The viscosity of the material is kept uniform by frequent checking with a No. 4 Ford cup, and making adjustments by adding thinner when thinner is needed. When these tests are made the temperature of the material is kept at 78° F.

No masks or shields are used during spray painting operations. When the white coat is sprayed on the inside of a reflector some slight overspray may strike and cling to the near outer edges but this does no harm. It becomes smooth and dry before the outside surfaces are sprayed with wrinkle enamel. The outside surfaces are sprayed so skillfully that no overspray reaches the inner white coated area which is always spray painted first.

About five minutes flash (air drying) time is allowed before the fixtures enter the oven where the wrinkle pattern is developed by baking for 30 minutes at 300° F. Fixtures cool as they travel to the assembly lines where wiring is installed.

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Paul Blackmore's 12-page article entitled

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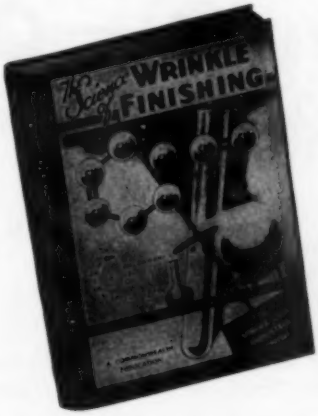

NEW! NEW! NEW!

The Science of
Wrinkle Finishing

A SINGLE COAT FINISH

A Sure Guide To More Efficient and Cost Reducing Industrial Finishing

The first fully authoritative book covers modern Wrinkle finishes from all angles . . . It tells in layman's language, but technically correct, what the formulator must do to produce a soft, suede-like finish, or a high metallic gloss.

The "Science of Wrinkle Finishing" is well illustrated, in color and black and white. Both actual size and magnified photographs are included to show the many variations of textures possible to attain with these one-coat finishes.

Preparation of the surface (little or none is needed with "Wrinkle" finish, making it the most economical industrial finish), spraying, drying and baking are all described in full.

The application to flexible materials such as paper, fabrics and wood are also dealt with and described clearly.

Technical data on polymerization and on drying oils, not heretofore available, are given special attention.

A BOOK WHICH INDUSTRIAL FINISHERS HAVE BEEN WAITING FOR

SOME OF THE SUBJECTS COVERED:

ORIGIN OF WRINKLE FINISH

How it was started
How to control characteristics
What is "crystal" finish
What is crystallizing lacquer

SPECIAL PATTERN FORMULATIONS

How to make patterns
How to blend for formulations
Where are various finishes used
What oils are used for different formulations

APPLICATION

How to apply "Wrinkle"
What temperature to use
What equipment necessary
How long to bake
What are the controlling factors
What is the most effective means of application
What is the viscosity of oils for applications
How to attain the finish desired

TABLE OF CONTENTS

Part I
1. Origin of "Wrinkle" Finishes
2. "Wrinkle" Pattern, Texture and Gloss
3. Color in "Wrinkle" Finishes
4. Physical Characteristics of "Wrinkle" Finishes
5. Surface Preparation for "Wrinkle" Finishing
6. Application of "Wrinkle" Finishes
7. Baking of "Wrinkle" Finishes
8. Flexible and Air Dry "Wrinkles"

Part II
9. Ingredients and Processing Equipment
10. Tung Oil Formulations
11. Castor Oil Formulations
12. Oiticica Oil Formulations
13. Linseed Oil Formulations
14. Perilla, Fish & Soy Bean Oil Formulations
15. Synthetic Resin Formulations
16. Asphaltum and Blown "Wrinkle" Formulations
17. Special Pattern Formulations
18. Air Dry & Flexible Formulations
19. Pigmentation

APPENDIX A:
Outline for Polymerization in drying oils
APPENDIX B:
Summary of "Wrinkle" patents
GLOSSARY OF TERMS

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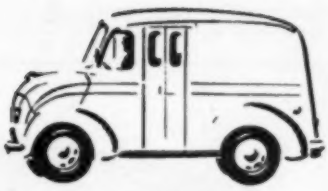


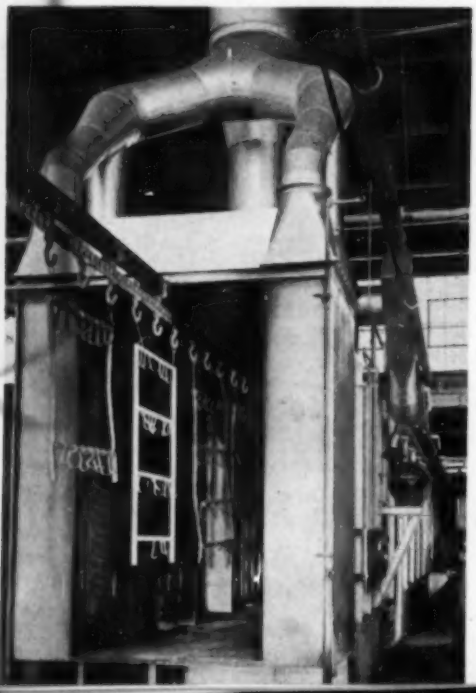
CLEANING AND PAINTING *House-to-House Delivery Trucks*

By HENRY HEDEEN
Plant Superintendent
Divco Corporation

HOUSE TO HOUSE delivery trucks are designed and built especially for multiple stop delivery. They are used principally for delivering dairy products, bakery goods, laundry, dry cleaning, newspapers, and food products. Many of these trucks are sold to large fleet owners who insist upon having a distinctive color, trademark, lettering and perhaps other decorative effects for their equipment.

A number of fleet operators have their own paint shops in connection with their service garages; these facilities are used for both maintenance work and new work. Accordingly the trucks that we sell to these concerss are prepared for painting and then prime coated inside and outside, leaving the top color coat to be applied by the customer.

Entrance to five-stage metal washer where truck parts are cleaned and rustproofed before they are prime coated.



All Surfaces Cleaned And Rustproofed

Correct surface cleaning and preparation are especially important under this plan of operation. The entire body and chassis pass through a 5-stage metal washer. In the first stage a hot (160° F.) alkali cleaning solution is sprayed on. This is followed by a hot water (150° F.) rinse. Next comes a rust proofing solution at 140° F.; this is followed by a cold water rinse. In the last stage a phosphoric-chromic acid solution is applied

Defense Orders

Bring the Problem of Finishing "Specs"

...ZAPON *Can Help*

As PRODUCTION swings over to Defense Orders, ZAPON *Service From Every Angle* becomes even more valuable to manufacturers.

ZAPON not only supplies finishes that meet government "specs" in the drum, but comply with performance requirements.

ZAPON technicians tackle any problem of "conformance" on your own production line. Let ZAPON help you set up your finishing department to fill government orders with speed and economy.

Service from every angle... that's ZAPON

Reg. U. S. Pat. Off.

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

Parts for delivery trucks leaving water-curtain spray booth where first coat of primer is applied. A second coat is given the entire truck after assembly.

Parts for delivery trucks are cleaned and rustproofed in a 5-stage machine, moved through a drying oven, prime coated by spraying in a water wash spray booth, and then the primer is dried in an infra-red oven for about five minutes at 250° F.

at 100° F. After leaving the metal cleaning and conditioning setup, body parts and chassis go through an infra-red oven where they are subjected to a drying heat of 275° F. for five minutes.

Body parts cool as they travel by conveyor to the water wash spray booth. Here, the chassis, the under parts and the under sides of fenders are given a spray coat of black synthetic acid-resistant enamel. The outside (exposed face surfaces) of fenders and all body parts receive a coat of red oxide synthetic primer; the insides of all body parts are coated with a gray synthetic primer. Just outside the spray booth the prime-coated parts pass through an infra-red oven where these coats are dried for five minutes at 250° F.

At a distribution point near the exit end of the oven all parts are removed from the overhead conveyor. All underbody parts are given a spray coat of black asphalt undercoating which serves as an insulator, sound deadener and rust preventative. All other parts are moved to the assembly lines.

Final Prime Coat Applied After Assembly

After assembly, our truck bodies are cleaned and touched up with a hand spot spray at all welds, and wherever the prime coat has been scuffed, rubbed thin or damaged in any way. [*Continued on page 74*]

LET US SHOW YOU HOW TO SAVE MONEY IN FINISHING YOUR PRODUCTS

As experts with many years of experience Young and Bertke engineers can show you how to effect substantial savings in your finishing department.

We design, manufacture, and install finishing systems, ovens, spray booths that will do the best possible job for you at the lowest cost.

This is no idle boast. Your best guarantee of our ability to help you is our record of saving among leading manufacturers where we have installed finishing systems recently. Let us show you how we can help you, too. We would like to consult you on your ovens, spray booths, fume, dust removal or complete finishing systems.

OVENS — SPRAY BOOTHS — FINISHING SYSTEMS

The YOUNG BERTKE Co.

1126 BUCK STREET CINCINNATI, OHIO

LEADING ELEVATOR MANUFACTURERS have found that DULUX plus careful application methods pay off in trouble-free performance for years and years. And the wide range of DULUX colors gives architects and interior decorators plenty of artistic freedom.

BUILT-IN BEAUTY FOR BUSY BUILDINGS

DULUX for elevators—typical of the 12,000 Du Pont finish formulas working for industry today

● When an elevator is installed in a building, it stays put! That's why the baked enamel that goes on elevator wall panels, ceilings and doors must keep its lustrous gloss despite constant scuffing and handling through many years of uninterrupted service.

To meet the unusual requirements of elevator manufacturers, Du Pont chemists have developed a special DULUX finish of exceptional durability. It is one of over 12,000 Du Pont finishes now serving industry.

Want to make your product look better, sell better, last longer? Want to cut your manufacturing or maintenance costs? Whatever your finishing problem, contact the Du Pont sales technician in your area . . . or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

STREAMLINERS MAKE SUPERSALESMEN for the railroads they serve when finished with eye-catching DUCO and DULUX Railroad Finishes. Today, 85% of America's leading railways use Du Pont paints on passenger-train equipment—real proof that DUCO and DULUX give top performance.

WHITE COAT KEEPS IT COOL! Finished with brilliant DULUX Tank White, the surface of a petroleum storage tank reflects heat rays with a high degree of efficiency. This keeps the interior cooler during hot weather . . . and thus prevents big evaporation losses.

NO PRINTING IN A PRESS! The snug-fitting containers that protect manufactured articles during shipment can leave ugly marks "printed" on improperly formulated finishes. With this testing device, Du Pont chemists measure the resistance of a finish to this printing action.

DEPEND ON DU PONT FOR BETTER FINISHES

DU PONT
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PAINTS • LACQUERS • ENAMELS • VARNISHES
THINNERS • STAINS AND SPECIAL-PURPOSE FINISHES
FOR INDUSTRY

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

The parts that have been prime coated are dried in this infra-red oven. Water-curtain spray booth can be seen in the background.

Next the head and tail lights, bumpers, grill, steering wheel and instrument panel are masked. Metal shields are used for some of these parts, while kraft paper held in place with masking tape is used for others.

The entire outside of each truck is given a spray coat of red synthetic primer; the inside receives a spray coat of gray primer. These prime coats will have ample time to air dry before the trucks are delivered to our customer who applies the top color coat, lettering and decorations.

U. S. Testing Co. Occupies New Location in L. A.

Frank Brennen, Los Angeles branch manager of the United States Testing Co., announces removal of that branch to a new location at 1723 S. Maple Ave., Los Angeles 15, Calif. The newly constructed building gives the laboratories several thousand feet of space, and new equipment will be installed. Many of the testing company's services, which were formerly referred to Hoboken, N.J., will now be conducted in Los Angeles. At present the Los Angeles branch is equipped to handle chemical, paint, engineering, and engineering-inspection tests.

Binks' Pump Division Offers Material Handling Pumps

The Binks Mfg. Co., 3118 Carroll Ave., Chicago 12, Ill., makers of spray painting and finishing equipment, has added a Pump Division. This division, which deals primarily with material handling pumps, enables Binks to offer users of spray finishing equipment a more complete line from one source.

Burke B. Roche, President, announces that Karl W. Osterstrom—a specialist in the design and development of air-operated hydraulic pumps—has been appointed Manager of the new Pump Division, in charge of Sales, Engineering and Development.

Mr. Osterstrom is an authority on air-operated material handling pumps. Before coming to Binks, he was in charge of research and development for leading manufacturers of air-operated pumping equipment. He played a prominent part in developments that led to the wide-scale use of air motors for the circulation of paints and fine finishes . . . and the application of heavy underbody coatings and sound deadeners for automobiles, trucks and railroad cars.

At Binks, Mr. Osterstrom will explore possible uses for material handling pumps in the spraying or flowing of finishing and coating materials.

Corrosion-Resisting Finish for Oil Storage Tanks

A major oil company is coating 24 of its giant steel oil storage tanks with an anti-corrosion system based on Vinylite resins, it was announced at the National Association of Corrosion Engineers' Seventh Annual Conference and Exhibition in New York, March 13-16.

Adopted after several years of testing, the system consists of five coats of Vinylite resin-based paint which resist corrosion from weather, water, and most chemicals. By creating a relatively flexible film with exceptional abrasion resistance, this base material also resists corrosion-inviting breaks in the coating caused by constant working and buckling of steel plates as the tank deck rises and falls.

Exterior surfaces of the tank and floating deck and the top 3-ft. of the tank interior—all that is exposed when the tank is filled and the floating roof is up—are first sandblasted down to grey steel. A metal conditioning coat is sprayed on, followed by a heavy coat of anti-corrosive primer. Three finish coats are then applied, ending with an aluminum pigmented clear vehicle.

Each of the coatings is based on Vinylite resins and covers about 300-sq. ft. per gallon per coat. The five coat system provides a coating approximately .0045 of an inch thick. Over the 5-coat system, a special Vinylite resin-based skid-resistant black coating has been used on the walkway and steps.—*Bakelite News.*

NEW PAINT PUMP
Out-performs
PRESSURE TANKS
Graco Paintmaster supersedes the pressure tank. Pumps from original containers.
Saves mixing time
Paintmaster's built-in agitator keeps paint mixed. Uses rotary gear pump, not air pressure . . . no aeration of paint.
Saves on down time
Graco's Paintmaster pumps paint right out of original container. No transfers to pressure pots. No shut-downs for refilling. Less clean-up time.
Saves up to 25% paint!
Big paint savings are possible with a Paintmaster because low operating pressure reduces overspray.
Write for free literature.
5-gal. and 55-gal. models available.
GRAY COMPANY, INC.
51 GRACO SQUARE
Minneapolis, Minn.
GRACO
Paintmaster
OFFICES: NEW YORK • PHILADELPHIA • DETROIT • CHICAGO • SAN FRANCISCO

Conveyorized Setup for

TABLE MANUFACTURING is our business. All of our thought, attention and planning is centered on the manufacture and finishing of tables of every size and variety. Like many other firms, we used to do it the hard way. Each table, mounted on skids, was manhandled from spray booth to spray booth throughout the finishing room.

We have changed all of that. A new hard maple floor has been laid, interior wall surfaces have been painted white, and we have put in new spray booths, drying ovens, cooling zones, a central finishing material supply room and circulating system and 4800-ft. of finishing conveyors.

Pallets Support Tables on Above-Floor Conveyor

The conveyor is a most important adjunct to our finishing system. This single chain, above-the-floor, pallet-type conveyor is designed primarily for cycle finishing

[PAGE 76]

By
Walter J. Mersman
President of the
Mersman Bros. Corporation

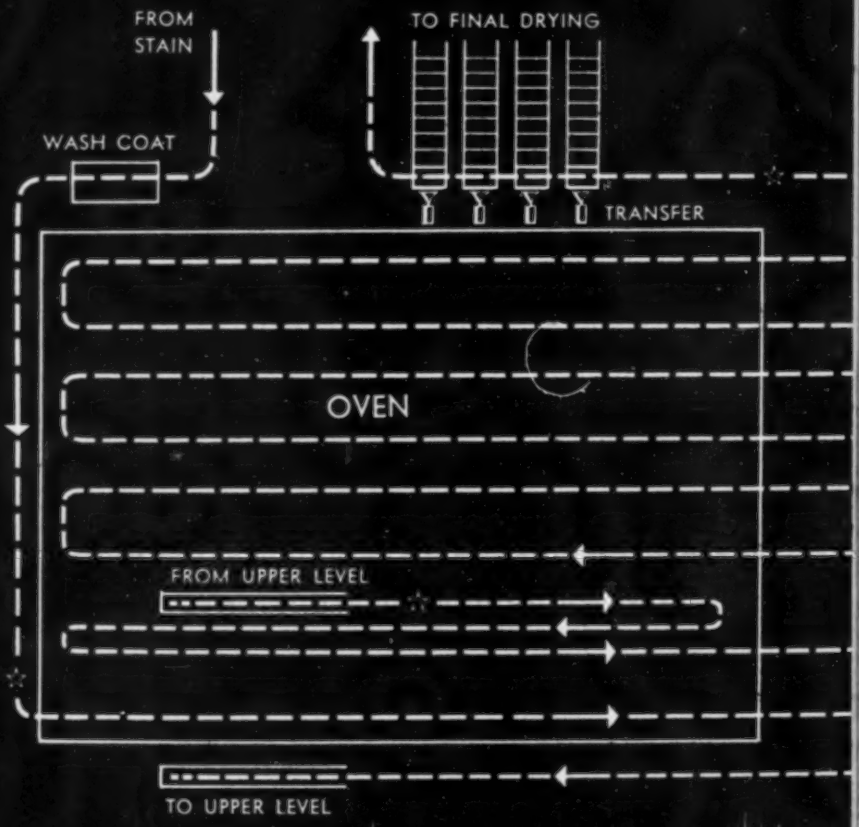
Finishing Fine Tables

of furniture, where a group of operators perform all finishing operations in prescribed sequence. We use it as a straight-line high-speed production conveyor operating on three levels. For the actual finishing, sanding and wiping operations the conveyor is about 27-in. above the floor. If and when it ever becomes expedient for us to go to cycle finishing, the change can be made with only a few minor adjustments in the present setup.

In our entire system we use 1500 pallets each of which is 34-in. wide by 60-in. long; these pallets are spaced on 7-ft. 4-in. centers. Each pallet will accommodate one table and a drawer, or two small tables. Pallets are constructed of ¾-in. plywood covered on both sides with ⅛-in. tempered composition board. The two long edges on one side of each pallet are reinforced (made thicker) with wood strips ⅞x⅞-in., as shown in some of the accompying pictures. This reinforcement is needed where one pallet pushes an-

other in close-pack areas—where the conveyor chain drops to and travels at a slightly lower level so that it does not propel the pallets—and for transferring loaded pallets by hydraulic rams. For cleanliness, the top surface of each pallet is covered with heavy kraft paper, held in place by wood cleats, to catch overspray.

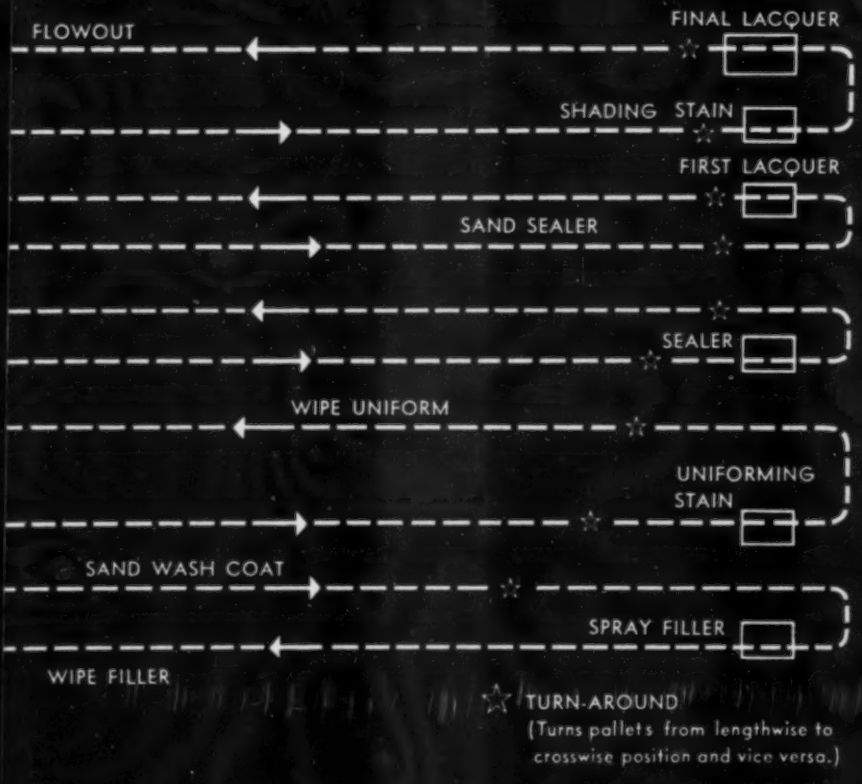
We have two large drying ovens. One is a 2-level setup for drying the foundation coats; the other—used for drying the final lacquer coats—is on one level. An upper deck, above the latter oven, is a cooling zone. In both ovens and on both levels the loaded pallets travel in close-pack formation; as a pallet enters a line of travel in



the oven, all of the pallets ahead of it move forward only the width of one pallet. The thick edges of the pallets are touching. Tables are in close-pack formation during flow-out and cooling periods, and for sanding operations.

At the beginning and at the end of a close-pack area, pallets are mechanically turned from lengthwise position to crosswise position and vice versa.

Two parallel rows of swiveled ball-bearing rollers (each row on a rail at each side of the conveyor chain) support the pallets which, in turn, carry the tables in process. Spray operators can easily rotate any pallet in either direction if necessary or desirable for complete



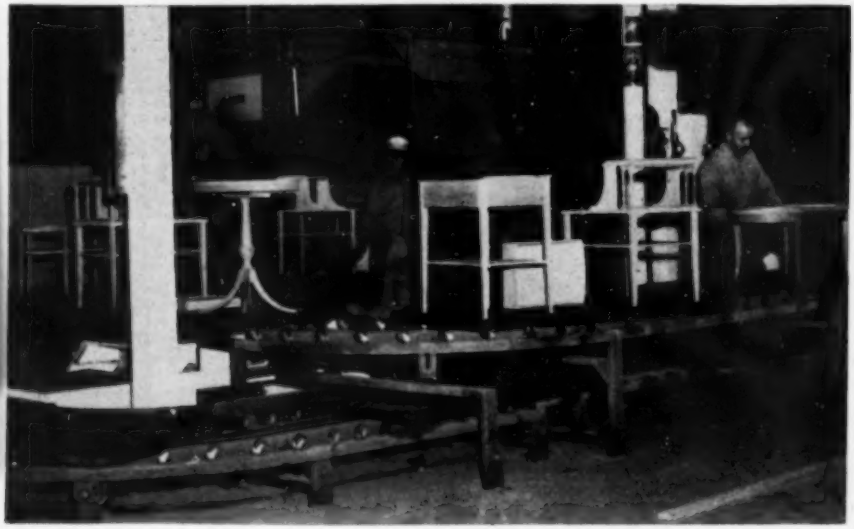
spraying. Any spray operator can advance any pallet several feet by hand by merely pushing it forward. This arrangement makes it possible to speed up the work considerably, for if work on a particular pallet is completed before the next pallet advances into the work area, the operator may push the completed pallet out of the way and pull the next one into working position.

Spray Booths Protected Against Fire Damage

Our eight large spray booths are protected by practical safety features. Each one rests on a concrete floor which slopes toward a center drain. Each booth floor is surrounded by a raised ledge of concrete. In case of fire in a spray booth, a 4-sided water curtain is automatically turned on to confine the fire to the one booth, and prevent the heat from spreading to set off nearby sprinkler heads which might result in serious water damage. Water from the curtain drains to the center of the concrete floor and flows down the drain pipe.

Finishing Material Is Piped From Central Supply Room

With the exception of the filler, all finishing material is supplied to spray booths through pipes from a central supply room located on the floor below the finishing room. All tanks in the central supply room are of 60-gallon capacity. Material is forced to the spray booths under pressure of compressed air. [P. 82]



This is the stain booth. Operator at extreme right blows off all sanding dust. Oven is at rear, back of booth. Note the hairpin turn in conveyor, showing tables coming from loading station at right. On the lower level, at left, empty pallets are returning from rubbing room to the loading station at right. Photograph, courtesy of George Koch & Sons, Inc.

. . . and there's no cure-all finish either

Regardless of the salesmanship behind it — a bottle of "snake oil" never proved to be a "cure-all." And the paint and varnish industry, to this writing, has never produced a "cure-all" finish either. Finishes, like medicine, must be prescribed if the end result is to be entirely satisfactory. Reliance has been "prescribing" finishes for many of the country's leading manufacturers for over 30 years. May we help you, too?

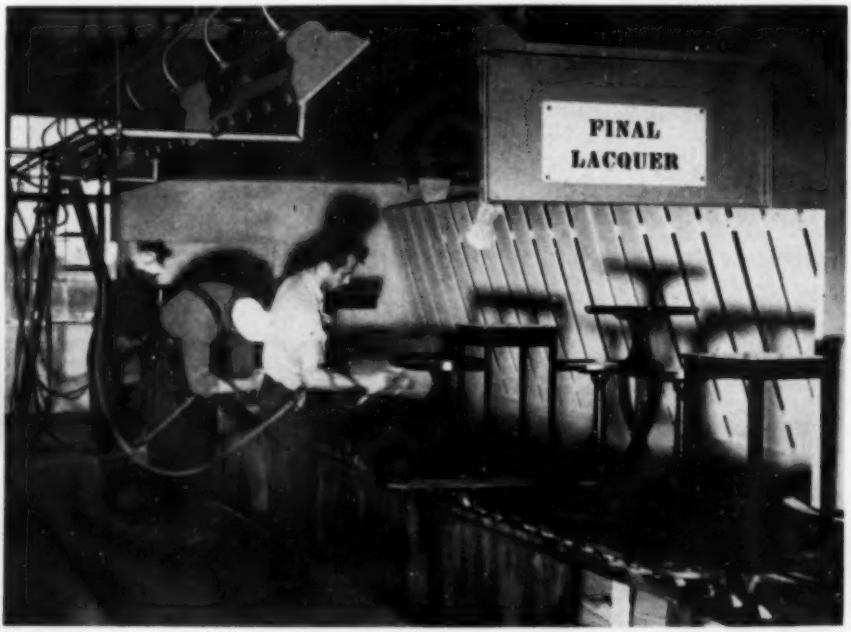
For additional information address 4732 Crittenden Dr., Louisville, Ky.

Just outside the filler booth four 60-gallon tanks contain filler; two are for heavy filler and two are for slush filler. One tank in each set is used for mixing material while its mate serves as the supply container.

Step-by-Step Procedure In Finishing Tables

Most of our tables are made entirely of mahogany. We make a few tables with mahogany tops and gum base. These gum bases require treatment with a uniforming stain; this is the reason for the uniforming spray booth just opposite the filler booth (see drawing).

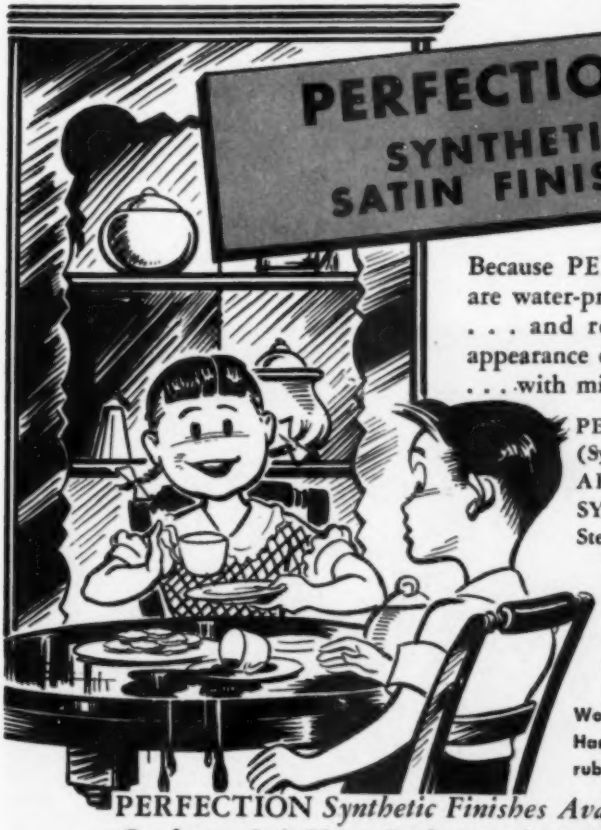
Now I will give you the step-by-step procedure on the all-mahogany tables. Pallets are loaded at the loading station with tables from the transfer conveyor or from the storage bank. Just before they reach the stain booth they are carefully cleaned by a thorough "blowing off" with a compressed air gun to remove all sanding dust. An *NGR stain* is sprayed at 40-lbs. atomizing pressure and 5-lbs. fluid pressure. A 3-minute flow-out time is allowed, followed by force drying for 15 minutes at 110° F., with 21% relative humidity. The table surfaces cool for five minutes before a *clear lacquer-base wash-coat*



Spraying the final coat of lacquer. Notice the concrete floor and raised concrete curb to confine and drain off water from water curtain which is automatically turned on in case of fire in the booth. All spray booths in the plant have this feature.

Mamas DON'T WORRY

WHEN FURNITURE IS FINISHED WITH



Because PERFECTION finishes are water-proof . . . liquor-proof . . . and retain that beautiful appearance of hand-rubbed finish . . . with minimum care.

PERFECTION FINISHES (Synthetic or Lacquer Type) ARE FLATTENED BY SYNTHESIS rather than by Stearate or Other Foreign Flattening Agents.

Clarity of Gloss Lacquer even in lower sheens • Will either gloss or dull rub • Won't haze or sweat back • Has that rubbed effect without rubbing • Has a waxed feel.

PERFECTION *Synthetic Finishes Available in Grades to Suit Your Budget and Drying Time.*

PERFECTION PAINT & COLOR COMPANY
715 E. Maryland St., Indianapolis 2, Indiana

Perfection SYNTHETIC FLAT FINISHES
WATER PROOF LIQUOR PROOF

is applied. Then tables travel ten minutes before they enter the oven where the wash coat is force dried for 15 minutes at 130° F., with 30% relative humidity.

After the surfaces cool for five minutes they are scuff sanded with No. 5/0 sandpaper. During the six minutes travel time the tables are "blown clean" before they enter the filler spray booth.

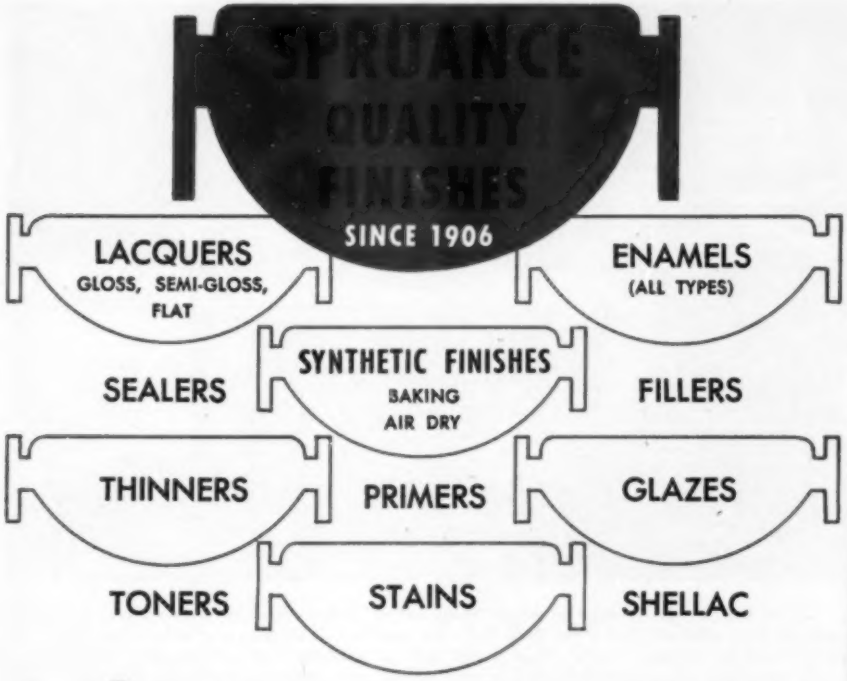
Filler; Clean Up; Drying; Sealer; First Lacquer

A heavy *oil-base filler* is sprayed on all tops, and a lighter slush filler is sprayed on the legs and under frames, using 55-lbs. atomizing pressure and 12-lbs. fluid pressure. Just outside the filler spray booth *an operator hand brushes the filler across the grain of the table tops to work it into the pores of the wood.*

Filled tables pass under two large fans which help to quickly set the filler. Then follows padding in by hand, cleaning up and inspection before the tables enter the oven. Inside the oven, tables travel in close-pack on both the high and low levels for two hours at 130° F.

After leaving the oven the filled tables cool for 54 minutes. The

In this view the camera man stands near the final lacquer spray booth and looks toward the filler spray booth far in background. Filler tanks can be seen in front of windows in background. Other spray booths appear at right. See the drawing accompanying this article.



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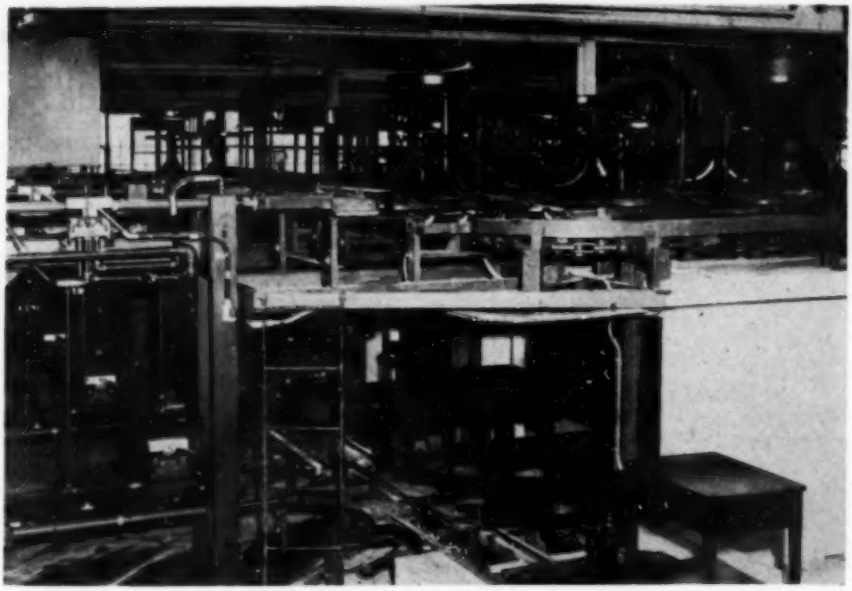

Below is entrance to oven in which final coat of lacquer is force dried; above is cooling zone through which tables move after the final coat is force dried and before the tables are transferred to rubbing room. (See upper left of drawing that accompanies this article.) If you look closely at left, below and above, you will see hydraulic rams that push pallets off the lengthwise conveyor and onto a crosswise track where they are in close-pack formation (edges touching) during force drying. Photo, courtesy George Koch & Sons.

reason for the exceptionally long cooling time is that the all-mahogany tables merely travel through the uniforming stain booth without any work being performed on them. Gum base tables receive a spray coat of *uniforming stain*, followed by ten minutes of flow-out time and 29 minutes of force drying at 130° F., with 30% relative humidity.

Next comes the sealer coat. All tables pass through the sealer booth where a *17% solids lacquer sealer* is sprayed on, using 60-lbs. atomizing and 30-lbs. fluid pressure. A flow-out period of ten minutes follows before the tables enter the oven where the sealer is force dried for 25 minutes at 130° F., with 30% relative humidity.

After a cooling period of 3¼-minutes, tables are sanded with No. 5/0 sandpaper just before they enter the first-coat lacquer booth. Here *a 21% solids clear lacquer* is sprayed on, the operators using 60-lbs. atomizing and 30-lbs. fluid pressure. A flow-out of 7¾-minutes is allowed before tables enter the oven where the lacquer coat is force dried for 24 minutes at 130° F., with 30% relative humidity.

(Continued on page 89)

STAINS • GLAZES

- LACQUERS
- SEALERS
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FOR APPLICATION BY ALL METHODS

Industrial Finishes in Step with the Times

Stains and Glazes to produce all modern or traditional colors with rare attractiveness. Specially formulated to give easy application with quick, dependable drying.

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CHICAGO 14

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"Angelus" Knows!

Master of volume merchandising, ANGELUS FURNITURE MANUFACTURING CO. holds its position by keeping all phases of planning, production and purchasing, in tune with current desires of the major markets.

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ANDREW BROWN COMPANY

Los Angeles, Calif. Seattle, Wash. Irving, Texas Laural, Md.

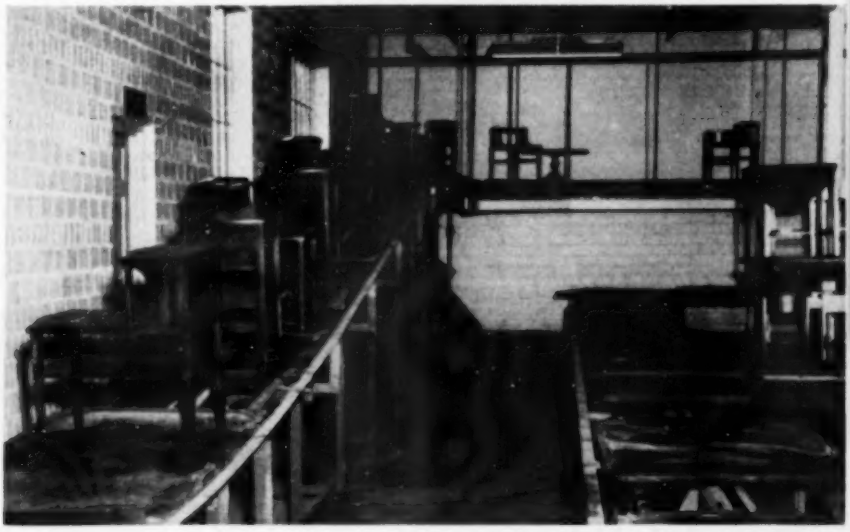
Back Sealer, Shading Stain, Final Coat of Lacquer

A cooling period of 7¾ minutes follows before tables enter the shading booth. Here the first operator sprays a sealing lacquer on all under surfaces of the tables; a second operator spot sprays a *shading stain* on any light edges or ends that need it. This light coating dries for two minutes before tables enter the final-coat lacquer booth. Here the first operator sprays a *21% solids high gloss lacquer* on all tops for subsequent rubbing. The second and third operators spray a *32% solids semi-gloss lacquer* on legs and the under parts of tables which will not be rubbed.

A flow-out period of 10¼-minutes is allowed before the coated tables on pallets are transferred by hydraulic rams to four close-pack tracks in the top-coat drying oven. Four pallets are transferred simultaneously to four tracks inside the oven. The final lacquer coat is force dried for 127 minutes at 110° F., with 21% relative humidity.

At the far end of the final-lacquer oven, loaded pallets pass from close-pack formation onto a transverse power chain which returns them to the entrance end of the oven, but now they are on an upper level. Again hydraulic rams transfer four pallets at a time to close-pack tracks on a deck above the oven where the tables cool for 127 minutes. At the far end of the cooling zone a power chain picks up pallets as they leave close-pack and carries them to the rubbing room.

(Continued on page 90)



At left you see finished tables coming down incline from cooling zone; they are on their way to rubbing room. At right, empty pallets are moving away to the loading station. Photo, courtesy George Koch & Sons, Inc.

S-Y TRADE MARK *Stains*

The Stille-Young line includes stains of every type, to meet the exacting needs of the Furniture and TV-Radio Cabinet industries.

Next time stains become your finishing problem, we invite you to investigate the S-Y line.

Phone—Write—Wire!

STILLE - YOUNG

Manufacturers

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Good Burning-in

REQUIRES

Good Knives

(Patent Applied For)

FASTER BURNING-IN, BETTER RESULTS WITH

the Wilkinson Knife

Made of just the right steel, ground and honed for proper concentration of heat. Easy handling—perfectly balanced like an artist's brush. Write for descriptive circular and prices.

Wilkinson Equip. & Supply Corp.
6958 S. Wentworth, Chicago 21, Illinois

Portable Air Rubbing; Clean Up; Polishing

All table tops are machine rubbed with No. 360 wet-or-dry sandpaper. The vehicle is 85% VMP naphtha and 15% light oil. After the first wiping off and cleaning up the tops are hand rubbed with 4-F pumice stone and the same vehicle as mentioned above. Then follows a final wipe-off and cleaning up. Following this treatment the tables air dry for two hours. Again the table tops are thoroughly cleaned and a very light coat of wax is applied and the excess is immediately wiped off. After final inspection and a second cleaning up, the finished tables are packed in cartons for shipment.

Chromatone Metallic Finishes

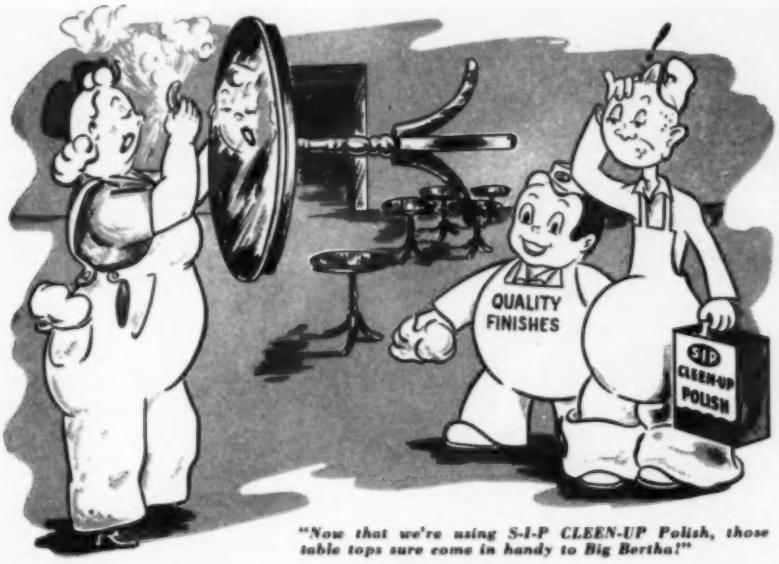
The Chromatone Corporation has just been established for the manufacture and marketing of nationally-known Chromatone trade-marked ready-mixed silver, gold and bronze finishes and Chromatone decorator synthetic enamels in a full range of brilliant basic colors. The Corporation has headquarters at 1527 Grande Vista Ave., Los Angeles, Calif., with a branch factory and warehouse at 9270 Olive Road, St. Louis 5, Missouri.

Monroe Sander Corp. Has 25th Anniversary

The Monroe Sander Corp. of Long Island City, N.Y., manufacturer of Sanco varnishes, lacquers, paints, enamels and synthetics, observed its 25th anniversary on April 25th.

To mark the occasion, founders of the company, Monroe Sander, president, and Eugene G. Bloch, executive vice president, sent to all their customers and suppliers an anniversary folder, the front cover of which shows a Sanco can, in the familiar orange and black colors. Superimposed was the greeting: "Sanco thanks you for its twenty-fifth birthday."

Inside the folder, on a double spread, is a large heading: "Sanco Has a Hidden Treasure Chest", and a message of thanks signed by Mr. Sander and Mr. Bloch.



"Now that we're using S-I-P CLEEN-UP Polish, those table tops sure come in handy to Big Bertha!"

MIRROR SMOOTH!

THAT'S THE KIND OF POLISH YOU'LL GET WITH

S-I-P Cleen-Up Polish

No fuss, no hard rubbing, no bother! Just "wipe it on and wipe it off." Save time and labor . . . increase the sales appeal of your product!

S-I-P CLEEN-UP Polish is made and guaranteed by the makers of the famous WEAR MASTER Finishes . . . and *you can try it without obligation.*

Mail the coupon TODAY for your FREE TRIAL BOTTLE.

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Wear Master

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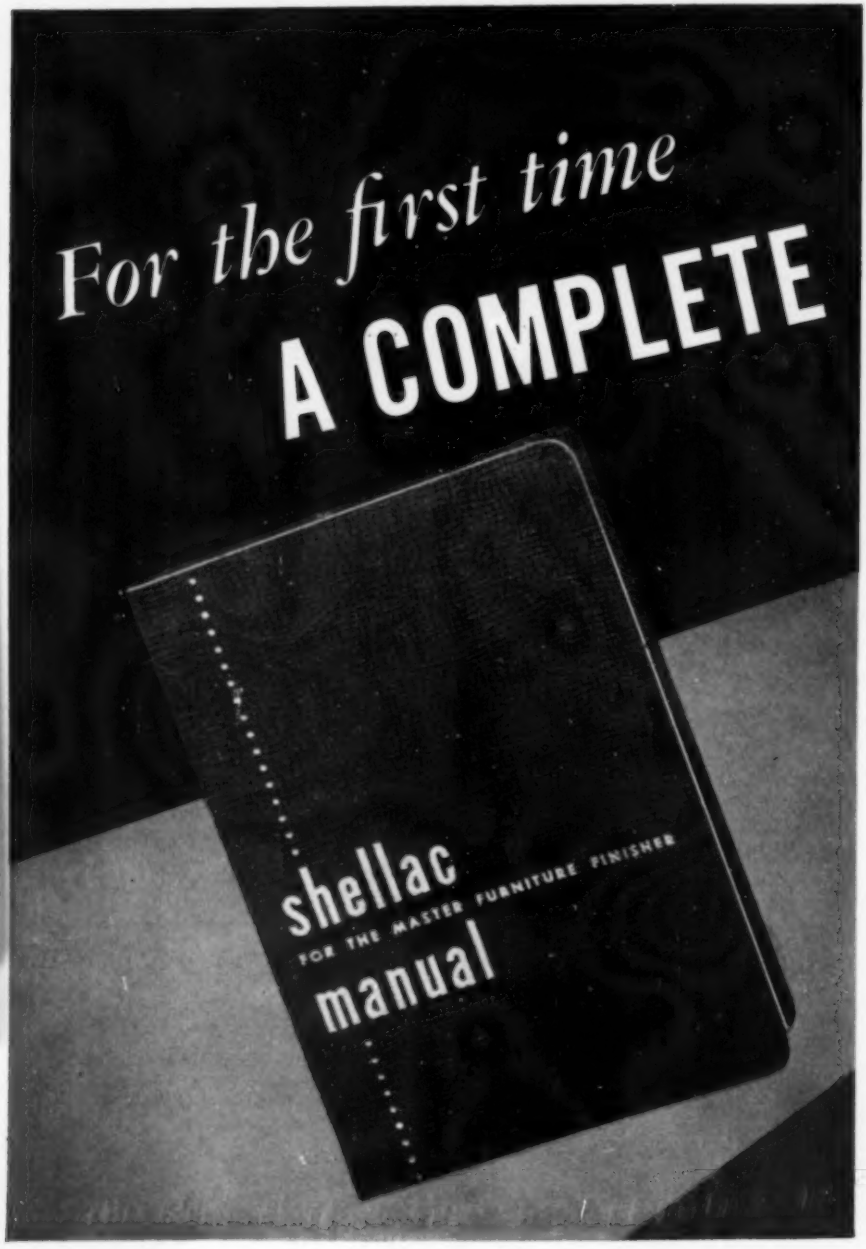
Just clip this coupon to your letterhead and mail it to us for a generous free sample of S-I-P CLEEN-UP POLISH. No obligation.

EVANSVILLE 4, INDIANA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A COMPLETE
shellac
FOR THE MASTER FURNITURE FINISHER
manual

SHELLAC MANUAL

to aid the furniture finisher

Veritable Encyclopedia of Shellac Facts—a thorough, but concise presentation on the subject of finishing with shellac. In it, you'll find proper methods of application, drying, cutting, polishing, storage, *all* the information that is vital to the efficient use of shellac in the finishing room.

FREE to master finishers and executives in the furniture manufacturing field upon application on their company's letterhead. Address requests to:

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of the American Bleached Shellac Manufacturers Assn., Inc.
65 Pine Street, New York 5, N. Y.

Paint Agitator Wanted

Please let me know who makes a small paint agitator suitable for use on a roller-coating machine that has a gravity feed tank of about three gallons capacity.—*W.S.Co.*

Try one or more of the spray equipment manufacturers who advertise in this magazine.—*Editor.*

Preparing Metal for Painting

We would like to get a copy of the article entitled, "Preparing Metal Surfaces for Painting" by Edwin Lacy, which appeared in October 1950 issue of this publication.—*B.C.Co.*

Tear sheets of the article are being sent.—*Editor.*

Tumble Wood Drawer Pulls?

On page 87 of February 1951 issue there is an article that refers to the tumbling process for wood drawer pulls. We use many thousands of drawer pulls and square knobs every year on our furniture, and these are all finished by a regular spray method.

We would like to learn whether or not a tumbling process could be developed, and would appreciate your forwarding this letter to Lupomatic Industries, so that they can contact us as well as the other furniture manufacturers they refer to in the article. —*P.F.M.*

The address of L.I. is 4510 Bullard Ave., New York 66, N.Y.—*Editor.*

Reflecting Type of Paint

We are interested in a "reflecting" type of paint similar to that material originally manufactured in America and now sold over here (London, England) under the name of "Day Glo". It has been suggested to us that, although the above mentioned material is only available in the form of screen pastes suitable for the printing trade, there is actually an air-drying paint of similar characteristics being made for indefinite exterior exposure.—*Franco-British Electrical Co.*

In a letter we are naming several manufacturers of luminous and fluorescent paints. Probably some of them can supply what you want.—*Editor.*

We Have Odorless Paints!

Our attention has been called to one of the "Letters from Readers", on page 94 of March 1951 issue of this magazine, entitled "Odorless Paints? Not Today!" . . .

There is only one other company, besides ourselves, that we know of, who makes a paint that does not give off an objectionable odor and, as we are pushing the sale of "Odorless" paints, it is not true that most companies making them have discontinued pushing them.

Of course, nothing is completely odorless, not even water . . . . However, we call our paints "Odorless" because they are odorless compared to any other paint manufactured, our

FAMOWOOD ... *the AMAZING* ...

ALL-PURPOSE PLASTIC for wood finishes!

Applies like putty... Sticks like glue!

FAMOWOOD is the answer...where wood finishes are important. Simple to use... efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. Dries quickly, does not shrink. *Stays put* under adverse conditions. FAMOWOOD sands easily, does not gum up sander. *Takes spirit dye stains freely.* Waterproof and weatherproof when properly applied. Ready to use— *"right out of the can."* Fifteen matching wood colors ...with amazing matchless wood finishes.

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CABINET MAKERS • CONTRACTORS • BOAT BUILDERS • PAINTERS
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AMERICA'S FINEST PADDING LACQUER

Creates new life in wood

- It is the Modern French polish
- Produces a beautiful, rich finish
- Can be applied easily with a pad
- Quick drying, durable, permanent
- Meets present day production demands
- No other finish compares with QUALASOLE

Order a Trial Gallon Can Today!

QUALATONE PRODUCTS INCORPORATED

21 GAY STREET, NEW YORK 14, N. Y.

West Coast Distributor: H. Behlen & Bro., Inc., 1755 Berkeley St., Santa Monica, Calif.

claim being that you can now paint indoors, even during winter, in complete comfort, with no paint odor nor eye smart.

We are sending you copies of three of the many letters we have received from people who have used our paints; also, copies of clippings from newspapers to show you what others say . . . .

There are so many companies manufacturing cakes, pies, candies, cough medicines, as well as milk products such as butter and cheese, who are now using our paint that there must be truth in our claims.—*Keystone Paint & Varnish Corp.*

Thank you. Next time some reader inquires for such an item we will know where to direct him.—*Editor.*

Electrostatic Spraying, Detearing

We would like to get a copy of the article, "Electrostatic Spraying and Detearing Applications in Metal Finishing", which appeared in *Industrial Finishing* some time during 1950.—*F.S.M.*

Tear sheets of a few of the several articles on these subjects, published in past issues of this magazine, are being sent to you. For further information, we refer you to manufacturers of the equipment, see advertising section.—*Editor.*

Bonds Glass to Metal

We notice in "Random Comment on the Industrial Scene" for December 1950, page 4, that reference is made to a "Bonding Agent R-313" for bonding glass, etc., to metal. This material is stated to be made by a concern in Los Angeles. We would like to obtain further information on this product, as well as the name and complete address of the manufacturer.—*Y. Corp. (Mechanical Cooling Since 1885)*

Our reference indicates the name and address of the firm is Carl H. Biggs Co., 11616 W. Pico Blvd., W. Los Angles, Calif.—*Editor.*

Finishing Glass Bottles

In February 1951 issue, under "Letters from Readers", page 72, we notice that "B.A.Co." wants information concerning the lacquer dipping of silver sprayed bottles.

We have been successful in this field and are supplying two major companies with lacquer for this purpose. The lacquer air dries or may be baked for one hour to a hard, resistant, flexible coating. The lacquer may also be dye-dipped to all the various brilliant colors.

We would like to get the full name and address of "B.A.Co." . . . Working samples and price lists will be sent to them upon receipt of a request on their letterhead.—*Kaltex Chemical Corp.*

Information supplied.—*Editor.*

Metallizing Process

In March 1951 issue, page 92, you mention under, "We Make Flock Adhesives", a company with the name "C.T.P. Ltd.", Melbourne, Australia. I would like to offer this company my Metalloplast Metallizing Process, regarding which a pamphlet is enclosed. — *Ernest Mueller, Consultant on Metallizing and Plastics.*

[The bulletin features a sprayed metal finish (bronze, gold, silver, etc.; air dry or bake) for coating plastics, glass, plaster, porcelain, pottery, wood or metal to make the object look

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TOPS IN ALL-AROUND EFFICIENCY

You'll find that New Period Production Finishes are an outstanding line that meets all requirements. Why not try them? Send for 5 gallon working sample at drum price.

- Fillers and Stains
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NEW PERIOD Production Finishes

ESTABLISHED 1917

NEW YORK WOODFINISHERS' Supply Co.

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Smash Those Rubbing Room Bottlenecks!

Available in TWO, ready to use, COLORS:

★ Neutral—for blond and light colored woods.

★ Universal brown—for use on the darker shades.

Give your customers furniture with that "expensive looking" wax rubbed finish using

WILKINSON'S WAX RUBBING LUBRICANT.

A product of extensive research and customer survey, WILKINSON'S Wax Rubbing Lubricant:

★ is free of "blooming" parafin oils.
★ allows faster cutting with fine abrasive paper.
★ cleans up easily with no "drag."
★ polishes to a soft patina
or
lends itself to further high gloss polishing with other WILKINSON Products.
★ produces a hard, mar-resistant finish to minimize showroom repairs caused by packing and handling.

WILKINSON EQUIPMENT & SUPPLY CORP.
6958 SOUTH WENTWORTH AVENUE
CHICAGO 21, ILLINOIS

Complete Wood Finishing Equipment and Supplies

like solid metal. This sprayed metallic coating can also serve as a base for electroplating.—*Editor.*]

Paint Sludge; Overspray

Could you tell us of any company, preferably in our locality (New York City) who might purchase our accumulated overspray from waterwash spray booths? We understand there are several companies engaged in the reclamation of this material.—*Peerless-Mayer, Inc.*

We purchase any kind of white paint overspray that is collected from your spray booths as sludge and scrap. We buy this material as is. You simply dump the sludge into old metal drums (which we pay for) and ship it to our Chicago warehouse.—*National Titanium Co., Vernon, Calif.*

We are located in Clyde, Ohio, 40 miles southeast of Toledo, and are dehydrating synthetic enamel sludge, as referred to in S.J. Co.'s letter in "Letters from Readers", page 90 of March issue.

We would appreciate your giving us S.J. Co.'s address so we can contact them, or you advise them so they can contact us.—*Clyde Paint & Supply Co.*

Orange Peel Article

Will you please send us tear sheets of the article, "Orange Peel, Its Causes and Remedies", which appeared in the January 1951 issue of *Industrial Finishing?—S.D.Co.*

Tear sheets are being sent to you. —*Editor.*

Fluorescent Bronze Powders

In January 1951 issue, page 119, you described fluorescent bronze powders that could be used for silk screen processing. Will you please give us the name and address of the firm that handles these powders?—*A.H.Corp.*

In a letter we are naming concerns to whom you may write.—*Editor.*

We can Help "H.&Co."

Will you please tell us the name of "H.&Co.", whose inquiry appeared on page 98 of March issue? We believe we can help them with their problem of coating wooden wedges.—*The Bloomfield Chemical Co.*

It's Whalen & Co., 22 Maple Road, South Chelmsford, Mass.—*Editor.*

Cigarette Proof Coatings

Please send us any information you have regarding cigarette proof coatings, both clear and pigmented.—*L.&E.*

This is a difficult order. In a letter we are naming a few concerns that have coatings which are said to be highly resistant to burns. To let a lighted cigarette lay on a finished wood top and burn itself out is almost like laying a red hot iron on that finished top. Would you expect to get by with that, without seeing some evidence of damage or a mark being left on the finish?—*Editor.*

Electrostatic Detearing

Please tell us the name of the manufacturer of an electrical device that removes the runs or drips from a wooden item that has been dipped into a tank. Our problem is to remove the so-called "tits" that accumulate on the low corner of a bridge table after we dip the entire table

Conveyor Line
Finishing Service

Every production operation using complicated automatic machinery or conveyor lines develops an occasional bug that has to be found and removed in a hurry.

Our technical men have grown up with the development of conveyor line finishing practices and therefore are experienced and thoroughly trained to ferret out trouble spots and find the right solution.

We are justly proud of our record of service to many of our customers who have conveyor line finishing operations. It has been to our mutual benefit to work closely together to maintain high efficiency.

If you are planning to convert your finishing production to Conveyor Line Finishing, our technical men have the "know how" to set up your schedule of operations and to recommend the materials to be used. They are at your service, without obligation. A phone call, a wire or a letter will give you the details of the recommended procedure to work out and solve your particular problems.

OUR 76TH YEAR OF SERVICE

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

Manufacturers of

FILLERS—STAINS—VARNISHES—LACQUERS—SEALERS—PRIMERS AND SPECIAL FINISHES FOR CONVEYOR LINE PRODUCTION

7430 STATE ROAD **PHILADELPHIA 36, PA.**

into a tank of lacquer. Someone has suggested that there is a manufacturer who makes some sort of an electrical device that will eliminate the end drips.—*X.Y.Co.*

The maker of the equipment calls these clinging drops that don't drop, "tears" and his equipment is called detearing. It's done electrostatically. The same concern that makes and installs electrostatic spray equipment also makes and installs electrostatic detearing equipment, see full page ads in March (page 43) and April (page 39) issues of this magazine.—*Editor.*

Wax-Base Rubbing . . .

In July 1950 issue we saw an article by C. S. Powell on wax-base rubbing lubricants. We find it interesting and would like to know where we can buy the materials mentioned.—*T.C.Co. (T.V. Cab'ts.)*

A ½-page ad appears on this in April issue.—*Editor.*

Who Makes "Feltape"?

We are interested in the article on pressure sensitive felt being marketed under the trade name "Feltape" as mentioned on pages 4 and 12 of April 1951 issue of this magazine. In our industry we use considerable felt, adhering it to both metal and glass.—*A.N.Co. (Advertising Novelties).*

Name and address of the firm is J. B. Dawn Products Co., 3905 W. 64th St., Chicago, Ill.—*Editor.*

Small Felt Wheels

In March issue there is an article by "The Felt Association" on page 30. Can you give us the address of this organization? We wish to get information on small hard felt wheels mounted on ⅛-in. spindles. Perhaps you can tell us where we can obtain them.—*E.P.Co. (Hardware).*

The address of T.F.A. is 480 Lexington Ave., New York 17, N.Y. Probably they can tell you where.—*Ed.*

We Have Water Dip Lacquer

We noticed, in the Letters from Readers, in April issue (page 84) a request for Water Dip Lacquer. They request a WDL suitable for coating copper-plated parts. We manufacture a lacquer and thinner suitable for this type of work and would appreciate your sending us the name of the company, so we can get in touch with them.—*V.J. Dolan & Co., Inc.*

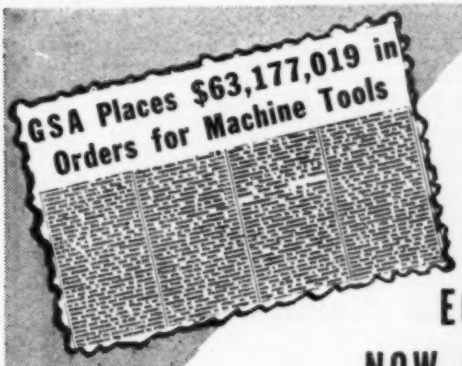
Wire Coating Enamel

In April 1951 issue under "Letters from Readers", page 84, we notice that S.L. Mfg. Co. is interested in a Wire Coating Enamel. We make and sell such a material and would appreciate your sending us the full name and address of the concern so that we may write them that we have the solution of their problem.—*J. Landau Co.*

Long Stroke Rubbing

On page 87 of April issue, in replying to B.C., you refer to a "large stroke rubbing machine". We would like information on the manufacturer of such a machine.—*T.M.Co.*

It's a product of Curtis Machine Div'n., Lincoln Park Industries, Inc., 1939 Gibson St., Jamestown, N.Y.—*Editor.*



You undoubtedly will get your share of this Government business . . . and with it your share of finishing bottlenecks too!

NEW EGYPTIAN SYNTHETICS NOW DRY PRACTICALLY AS FAST AS LACQUER making optional finishing systems for machine tools

practical. With both these highly efficient Egyptian Systems available to you, today's finishing problems arising from uncertain material delivery schedules need no longer disrupt the smooth operation of your finishing department.

This timely development of "Quick Drying" Synthetic and Lacquer Finishing Systems, by Egyptian Research, places at your command the most formidable combination ever to break a finishing bottleneck.
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South Kearny, N. J.
Lafayette, Ind.

THE EGYPTIAN LACQUER MFG. CO.
Box 444, Newark 1, N. J.

Please forward further information on Egyptian specification finishes.

MR.....

FIRM.....

ADDRESS.....

.....

NOTICE

THE RAPIDS-STANDARD COMPANY, INC., OF GRAND RAPIDS, MICH., HAVE BECOME A DEFENDANT WITH KINDEL FURNITURE COMPANY, GRAND RAPIDS, MICH., IN THE SUIT AGAINST KINDEL FURNITURE COMPANY, etal, BROUGHT IN THE UNITED STATES DISTRICT COURT OF MICH., BY ALBERT R. DeBURGH, FOR INFRINGEMENT OF PATENT 2,317,675.

Investigate!

DeBurgh Conveyors

Patented and Patents Pending

For Assembly, Finishing and Upholstery

1741 K St., N. W., Washington 6, D. C.

PROVOCATIVE

An important factor which motivates prospective buyers to select products is a *provocative finish* . . . a finish which compliments design . . . accentuates detail.

And, for a finish of this nature, you need one that is specially-made for you. That is why we have a capable staff of artists in our Creative Studio; artists who "key" the finish to the "personality" of your product.

May we show you examples at no cost or obligation?

No Tampering with Quality

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS

Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

Our Plywood Warps

We are encountering a lot of trouble through the warping of plywood panels ¼-in. and ½-in. thick. This usually occurs during the two to three days these panels, which have mahogany face veneer, are being bleached and are placed in racks. We would appreciate it if you would let us know of any process or change in our process which could eliminate this condition.

We would appreciate it if you would also recommend to us a good crack filler which will take finishes.—G.L.Co.

Do you wet the opposite side of the panels when you are bleaching the face side? Naturally, if you apply something wet that penetrates the wood on one side and then leave the other side dry, the wet side will expand sufficiently to warp the panels out of shape. If you are not doing so, we suggest that when you apply bleaching compound to the face side, you try applying plain water in equal volume, to the opposite side for purposes of equalizing the swelling strain.

Really, you haven't given us sufficient information on the details of your treatment of processing to enable us to give you an intelligent answer. The most accurate answer should come from an experienced technical man or engineer who could come into your plant, observe the exact details of your working procedure, along with all other conditions affecting same, and then he could tell you immediately what is causing the warpage of panels, and he could advise you how to change the procedure to avoid this warpage. There should be some competent individual in or near your city (Paterson, N.J.) who could do this for you.

Regarding a satisfactory filler for cracks, we are naming two or three sources of supply in a letter to you. —*Editor.*

Paint's Change of Color Indicates Temperature

On page 122 of *Industrial Finishing* for March 1951, there is a paragraph entitled, "Paint Indicates Temperature". We are interested in this and ask that you tell us the name and address of the company so we can make further inquiry concerning the product.—*D.&N.*

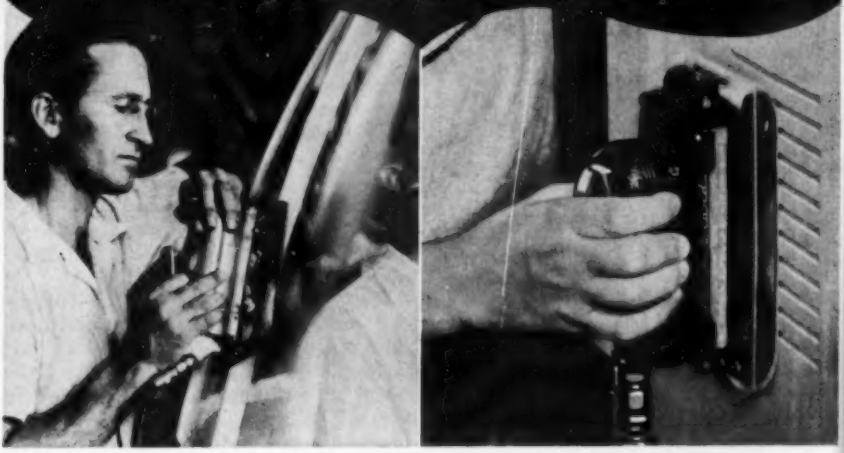
Editor's Note: The selling agent for U.S.A. and Canada is Tempil® Corp., 132 W. 22nd St., New York 11, N.Y. Quoting from some of the company's literature:

"Thermindex" paints are temperature sensitive compounds which indicate, by a sharp clear cut change of color, when the temperature of a surface has attained or exceeded a predetermined value, so that information on the temperature of an entire surface is given at a glance.

They are supplied in the form of paints suitable for direct application by brushing or spraying, to practically any surface; they dry quickly at room temperature. When the temperature of the treated surface is

Whatever your sanding problem

. . . on wood, metal, plastic



. . . there's a SUNDSTRAND

Straight-Line Action Air Sander to solve it!

No swirls, no pressure marks, no fatiguing vibration! Used throughout the world for: Wood finishing . . . building materials, furniture, cabinets, wood parts, etc. • Plant production and maintenance work • Finishing metal and plastic parts • Truck, car and machinery refinishing • Both single and double pad models are available. Contact your local supplier or write today for bulletin IF-5.

SUNDSTRAND

SUNDSTRAND AIR SANDERS

SUNDSTRAND MACHINE TOOL CO.

PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

then raised, the original color of the pigment changes sharply at a definite point and the new color persists after the surface has cooled down.

A color chart which we can supply, shows the temperatures indicated by those "Thermindex" paints at present made as standard. All the colors mentioned, with the exception of G.87, produce irreversible color changes. Actual color photographs of strips made with "Thermindex" paints are illustrated on our folder.

While the change of color is mainly dependent on the temperature attained, the length of time to which the color is exposed to that temperature also has some effect. . . .

Stripper to Dissolve Aluminum

In the "Letters from Readers" in March issue, on page 90, I notice where "R. Company" is having difficulty removing aluminum from ferrous parts. Would you please pass along this information for what it is worth?

Although we do not do this as a regular procedure in the plant, I have found in the laboratory (and I have done this numerous times) that a strong solution of caustic soda (sodium hydroxide) will dissolve aluminum and not attack ferrous metals. The solution should be used hot and naturally it goes without saying that caustic should be handled carefully, especially when it is hot. The time of the process is directly dependent on the volume of aluminum to be removed. The ferrous parts are washed in cold water and then, if you wish, in clean hot water, and dried.

Conversely, I have found that if you want to remove the ferrous iron and leave the aluminum, a solution of 50/50 nitric acid in water does the job. One thing though, nitric acid will attack aluminum somewhat, but again time and temperature are controlling factors.—*Edward Littell, Metalurgical Engineer.*

Remove Silicone Polish Before Repainting

Being a regular reader of *Industrial Finishing*, I should like to know the treatment for the surface of an automobile which has been polished with a 4% Silicone polish—when this surface is to be repainted. In March issue, page 35, an article refers to "a suitable solvent". What solvent do you recommend?—*Nias, Ltd. (Eng.)*

The short article to which you refer was based on information contained in a bulletin published and distributed by the Refinish Sales Dept. of DuPont Co. It suggested the use of DuPont's "Prep-Sol" as a preliminary cleaner in a cleaning process that includes three operations. First, the "Prep-Sol" is applied to the surface by wet wiping. Then the wet surface is carefully wiped with clean rags or tissues, the wiping technique being such that only a clean portion of the cloth or tissue touches the wet surface. *This means only a single wipe-up stroke for each exposed part of the cloth or tissue.* There must be no back and forth wiping. Otherwise traces of silicone polish will be smeared over and into the surface instead of being completely removed. Used cloths or tissues must be immediately removed.

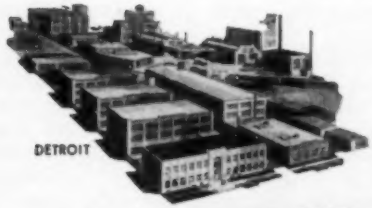
Following this wiping comes wet sanding with No. 320 paper, using naphtha or lacquer thinner as the sanding lubricant. Then the wet sanding residue is carefully wiped off with clean cloths or tissues, using the same technique as in Operation No. 1.

Finally, apply "Prep-Sol" and wipe as described in first operation.—*C.M.*

U. S. GOVERNMENT SPECIFICATION FINISHES

Lusterless, semi-gloss & gloss lacquers, enamels, undercoats & thinners to meet virtually all U.S. Gov't. Specifications

WRITE for Booklet listing over 150 Government Specification Finishes for U. S. Army, Navy, Chemical Corps, Air Force, Ordnance, Joint Army-Navy and Federal.


DETROIT

ANAHEIM, CALIFORNIA

Illustrated *(left)* are Rinshed-Mason's 37 building units at Detroit and Anaheim, California, consisting of office, factory and laboratory facilities. Not shown are field exposure test facilities in Florida.

Established in 1919, Rinshed-Mason is one of America's leading manufacturers of fine quality lacquers, enamels and undercoats for automobiles, farm equipment, appliances, and numerous other peacetime industrial products. Beyond this, versatile laboratory and production facilities are available to meet defense requirements for protective and other coatings.

Rinshed-Mason Co.

5935 MILFORD AVE
DETROIT 10, MICH

R-M

1244 N. LEMON ST.
ANAHEIM, CALIF.

Pumps Material from Container to Spray Guns

A new line of air-operated material handling pumps is announced by the Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. These pumps are especially designed for use with spray or flow guns, including those used for fine finishing work. They handle all materials from thinners, enamels, lacquers, and paints to adhesives, sound deadeners, heavy roofing materials, and protective coatings of every kind . . . even those containing abrasives. These pumps operate directly from original shipping containers.

When one of these new material pumps is used in conjunction with a Binks fluid regulator, pulsation is completely eliminated. Material flow is absolutely steady and uniform. As low as 3 lbs. can be precisely maintained.

Binks Bulletin 700 tells about the pumps.

Binks pumps deliver materials to the guns under controlled hydraulic pressure. The high pressures possible with this equipment make it practical to pump many materials considerable distances from supply drum to one or more guns, thus reducing handling of drums. These pumps may also be used for transferring materials from one container to another, or for mixing operations.

Type A pumps clamp to the rim of open 55-gallon drums; Type B pumps are designed for use in the 2-inch bungholes of 55-gallon drums; and Type BS pumps fit 5-gallon containers.

A unique feature of Binks pumps is their double-acting operation and long stroke. Material is pumped on both the down-stroke and the upstroke of these reciprocating, positive-action pumps, giving a smooth fast flow of materials.

Moisture-Proofing Electric Coils

The problem of protecting electrical components such as coils from moisture to prevent shorting out has always been a serious one. Common practice has been to impregnate the coil with varnish by a pressure-vacuum method and then, in many cases overcoating with microcrystalline waxes.

The development of a new synthetic wax, Wax S-1167, overcomes this difficulty by giving an effective moisture barrier. Coils impregnated with Wax S-1167 by a pressure-vacuum system have resisted shorting for a minimum of 30 cycles after being steeped in water containing a powerful detergent before every cycle. The old type impregnated and overcoated coils fail in such a test in a maximum of six to seven cycles.

Wax S-1167 is a completely synthetic dark organic wax with melting point of 248° to 257°F. and a flash point higher than 482°F. It is tough

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THE SOUTHEAST

- LACQUERS
- SEALERS
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- PIGMENTED WIPING STAINS
- NGR STAINS

IMMEDIATE DELIVERIES! We own and operate several trucks to provide immediate and safe delivery of finishing materials to our customers. This service means a lot when you're in urgent need of materials. TRY IT!

Complete Technical Service At Your Disposal Also

Snyder BROTHERS COMPANY

Manufacturers **INDUSTRIAL** *of Quality* **LACQUERS**

P. O. BOX 548 — TOCCOA, GEORGIA

and does not tend to become very brittle at low temperatures. When applied to metals as a hot melt it has good adhesion to the surface of the metal, with a minimum of shrinkage. Specifications and samples are available from the manufacturer, Glyco Products Co., Inc., 26 Court St., Brooklyn 2, N.Y.

New Lacquer for Polystyrene

A new lacquer for finishing polystyrene products, one that provides a lasting smooth coating to the plastic, has been developed by the United Lacquer Mfg. Corp. of Linden, N. J., and Everett, Mass.

The new lacquer, Base C 5123, may be applied with standard spray equipment, and gives good adhesion and a high degree of durability. It gives an all-over uniform finish without any "crazing", or wrinkling.

Base C 5123 is available in all colors, in gloss, semi-gloss and flats. It air dries, as other standard lacquers, in about 15 minutes.

High Temperature Paint Resists 1900° F.

High temperature paints have been developed that are capable of withstanding temperatures up to 1900°F., it is announced by Fire-Gard, Inc., with sales offices at 1424 K St., N.W., Washington 5, D. C.

The material is known as "Fire-Gard" and can be applied to all types of wood or metal surfaces by conventional application methods. It forms a bright finish that is not only resistatn to high temperature but in addition, to moisture, corrosion, mild acids, mild alkalies, and oxidation or fumes encountered in industrial plants. These paints are available in aluminum and most colors including black and white. This extra high temperature coating series is in addition to the company's regular line of fire-retardant and resistant finishes.

The coating may be applied on all surfaces formerly regarded as "unpaintable" due to the deterioration by the high temperatures or other corrosive influences.

These coatings were developed under a cooperative project directed by Mr. Ray C. Crippen, Research and Development Laboratories, Baltimore 2, Md. Mr. H. C. Parker, Suite 616, 1424 K St., N.W., will handle sales in the Eastern Area.

Teleflex Conveyors

The Teleflex overhead conveyor, for moderately light weight products, consists of a flexible screw-type cable (with an exterior thread) which revolves within a Y-shaped rail. It is driven at one end by a motor, reduction unit and coupling. Hanger hooks ride along between threads of the rotating cable.

Light loads can be transported

Threaded cable turns in Y-shaped rail above.

design engineers know...
there's no guess when it's a finish by...
STANDARD
Linked to Industry

around bends and through rise and fall. On the overhead conveyor, articles are suspended from the cable by removable hooks hung anywhere on the line. Teleflex is flexible. It can be operated as a one-way or a closed circuit conveyor.

It is a product of Teleflex, Inc., 248 W. Wingohocking St., Philadelphia 40, Penna.

Solvent for Photo Silk Screen

A solvent that removes the gelatine film from photographic plates is now available, according to H. W. Parmele, President, The Naz-Dar Co., 461 Milwaukee Ave., Chicago 10, Ill. The silk need not be removed from the frame. The solvent completely dissolves the film in a few hours. It washes off with clear water, leaving silk ready for re-use.

Considerable savings are offered by this solvent according to the distributor. Since the solvent works unattended without scrubbing, labor costs are reduced. Because the silk lasts longer, the printer saves labor and the cost of silk used in replacement.

Portable Sand-O-Flex Wheel

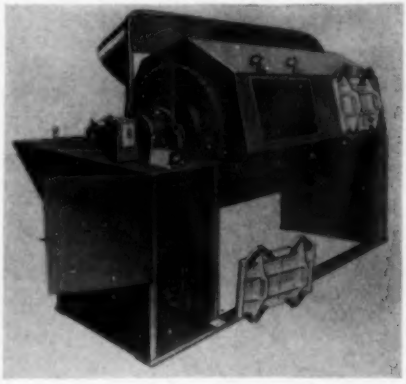
A new, improved Sand-O-Flex sanding wheel, Model 350R, is now in production in the plant of Merit Products, Inc., Culver City, California. The new unit is a brush - backed sanding device that may be attached to any rotating shaft for sanding and finishing curved and contoured surfaces. This model is particularly recommended for use on portable electric drills and flexible shafts because of its light weight and compactness.

The sander has eight replaceable brushes fastened to its perimeter. These brushes back up and "cushion" eight strands of abrasive cloth, 1-in. wide, which unwind from a single core. As the wheel rotates, the abrasive strips mould to the contour of the work piece, with "paint brush" action.

New Tumbling Barrels

Made in both constant and variable speeds, the new "Murco" tumbling barrels have both motor and operating mechanism totally enclosed. The only exposed parts are the controls and magnetic reversing starter. A limit switch permits operation only when the hood is closed.

Illustrated is the 7½-hp. constant-speed model that operates at 25-r.p.m. The variable speed 7½-hp. model has speeds from 8-r.p.m. slow speed to 25-r.p.m. high speed, with an infinite range of speeds in between to meet operating conditions. Speed changes may be made while the barrel is in motion. The foot operated hydraulic brake at



Has constant or variable speed drive.

Discover.... WHAT KAY & ESS CAN DO FOR YOU!

EXPERIENCE UNLIMITED
in these special finishes

- ★ TRUCK FINISHES
- ★ ORDNANCE FINISHES
- ★ WRINKLE FINISHES
- ★ APPLIANCE FINISHES
- ★ CAN COATINGS
- ★ IMPLEMENT FINISHES
- ★ CHASSIS BLACKS
- ★ BUSINESS MACHINES

VARNISHES, JAPANS, LACQUERS AND ENAMELS FOR INDUSTRIAL USE

The KAY & ESS Co.
KISER and LEO STREETS • DAYTON 4, OHIO

SINCE 1901

ATTENTION: INDUSTRIAL FINISHING SALESMEN!
DISCOVER what Kay & Ess can do for YOU! If you're considering a change, write in complete confidence to Kay & Ess, Kiser & Leo Sts., Dayton 4, Ohio.

floor level stops the barrel in any position; facilitates loading and unloading and prevents accidental dumping of loads.

The new "Murco" tumbling barrels are also made in 5-hp. constant and variable speed models, and 3-hp. constant and variable speed models, by D. J. Murray Mfg. Co., Wausau, Wisconsin.

"Skin-Cote" Hand Protection

A complete line of barrier creams and liquids for skin protection and cleaning is announced by the Safety Division of The Boyer-Campbell Co., 6540 St. Antoine St., Detroit, 2, Mich., and is known to the trade as "Skin-Cote". It consists of six different types of creams and four different liquids to take care of every individual need.

The creams come packed in 8-oz., 12-oz., and 16-oz. jars, 12 or 24 jars to a carton and in 25-lb. pails; the liquids come in pints, gallons and 50-gallon drums. Several of the larger automobile concerns have found that using only two types of "Skin-Cote" gives them almost complete protection and has made dermititis one of their minor hazards.

New Finish Replaces Chrome Plating

New protective coatings, applied over "Iridite" and similar metal-finishing processes, produce an attractive, durable finish similar to chrome plating, without the use of copper, nickel, chromium, etc. These same coatings also can be used to add to the life of the scant chrome plating which is now permitted.

Two types are available; Baquik Clear Coating X2534 which is a baking type (range 225°F. for one hour to 300°F. for 15 minutes) and Metal-bond Clear Coating SL-300 which is an air-drying type. Both can be sprayed or dipped. Both are water-white, contain a large percentage of solids, and will not discolor. Both have a high resistance to impact and abrasion and have withstood 200 hours of salt spray with no visible breakdown of film. This exceeds the specifications for chromium plating.

Complete information is available from the manufacturer, Strathmore Products, Inc., 1970 W. Fayette St., Syracuse 4, New York.

Wet-Blast Cleaning, Finishing

A new metal-working procedure in the fields of high-speed accurate deburring, descaling, stock removal and general surface finishing is now available for industrial application through the use of Cro-Hone Pressure Blast, a wet-blaster manufactured by the Cro-Plate Co., Hartford, Conn.

In most common types of wet-blasting equipment, the mixture of abrasive and water is lifted to the gun by

For rapid and effective wet-blast cleaning and finishing of metal parts.

RANDOLPH know-how works everywhere in the arsenal of DEFENSE!

Army and Navy Specification Finishes
Black Enamel E 3
Defense Equip't Protect. Enamels
Pigmented Ammunition Lacquers
Olive Drab Enamel
Tank Finishes
Zinc Chromate Primer
Aircraft S.G. Enamel
Aircraft Dial Finishes
Aircraft Lacquers
Black Primer No. 112
Metal Lacquer 110
Randolph Thinners, Reducers
Aircraft Dopes—Nitrate Dopes
Randolac S F for Metal
Plywood Sealer A-17
Randolph Lacquer XF for Metal
Red Oxide Primers
Colored Lacquers, Metal, Series 2200
Acetate Butyrate Dopes
Undercoats S-G Primers
Infra Red S-G
Texture Enamels (Wrinkle)
High Bake S-G—white, colors
Metallic S-G Finishes
Medium Bake S-G—white and colors
Metal Lacquer 185
Water-proofing Compositions
S-G Silk Screen Paste
Series 112—Plastic Lacquers
Screening Enamels
Exterior Metal Lacquer 120

What is the secret behind the mighty force of American Production?

The answer is know-how—as demonstrated by RANDOLPH in supplying GOVERNMENT SPECIFICATION FINISHES that help achieve production goals. Go into the factories where America's military and civilian needs are being met—and you'll find RANDOLPH giving the special qualities of a superior finish to products ranging from aircraft and ammunition to tractors and appliances.

Get a RANDOLPH FINISH in any quantity—on time! Write us today to avoid any finishing problems.

RANDOLPH
PRODUCTS COMPANY
CARLSTADT, NEW JERSEY

DOPES · LACQUERS · ENAMELS · THINNERS

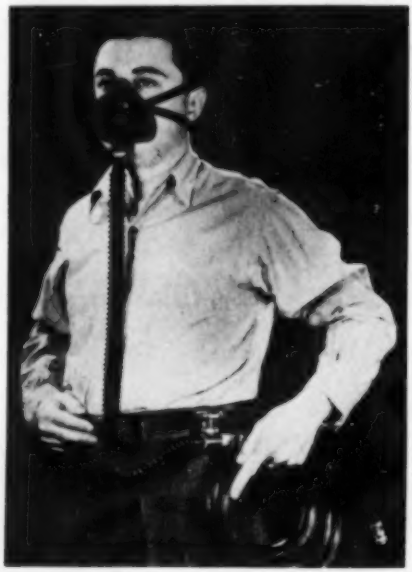
centrifugal pumping action. The Cro-Hone Pressure-Blast reduces maintenance and down time by eliminating all moving parts.

In operation, the work to be finished is inserted in the 30x30-in. cabinet through the front hand-holes or side doors. Both entrances are fitted with splash-proof guards which allow neat, leakage-free installation. Mechanical, knee-actuating valves and controls are located within easy reach at the front of the cabinet, and a clear-view window enables the operator to watch the progress of the work.

Respirator Protects Workmen

The No. 2099 Air Line Respirator is announced by American Optical Co., Southbridge, Mass. It is recommended for such operations as paint spraying, cleaning tank cars, abrasive blasting, and similar work.

No filters or cartridges are needed because a continuous flow of fresh air is directed through the hose.



Useful where contaminants are heavy.

Air flow to the facepiece of the No. 2099 is regulated by an adjustable valve clipped to the worker's belt or clothing. The valve locks in position and cannot be accidentally changed.

A detachable hose coupling at the junction of breathing tube and supply hose automatically shuts off air supply when detached. The entire assembly is designed to operate at air line pressure between 9 and 25-lbs. per square inch.

Chrome Finish Substitute

A special extra fine aluminum lining pigment capable of producing films of chrome-like appearance is announced by Metals Disintegrating Co., Elizabeth, N. J., manufacturer of metal pigments, metal powders and metal abrasives.

Brilliance and metallic luster are obtained with MD 769 Aluminum Paste which is recommended for simulated chrome finishes. It provides, the maker states, a good substitute for chromium plating.

Vinyl Latex for Coatings for Paper and Fabrics

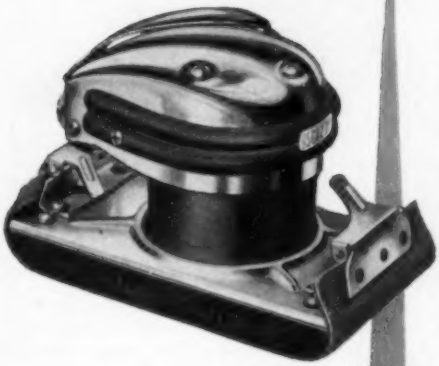
A new vinyl latex for use in the paper, textile and paint industries has recently been offered to the trade by The Dow Chemical Co., Midland, Michigan.

Called Dow Latex 744-B, the new product is the result of extensive research on vinyl chloride and vinylidene chloride monomers and their copolymers produced in large quantities by Dow.

Now in commercial production, the new latex is designed to serve both as a functional coating material and as a pigment binder. It gives resistance to moisture, chemicals and

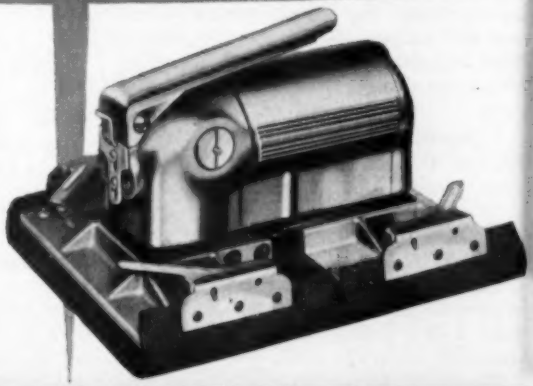
National Sanders

STRAIGHT-LINE *or* ORBITAL ACTION



National offers either orbital or straight-line action in its line of light-weight, fast, portable air sanders. Orbital action for speed and longer abrasive life . . . straight-line action for applying pattern or conforming to grain. No matter what type of sanding is most satisfactory for your needs, be sure and see your National Sander distributor. He is able to advise you impartially as to the machine that will best fill your requirements. Write the factory for details.

- ***Light-weight***
- ***Powerful***
- ***Vibrationless***



NATIONAL NS SANDERS

NATIONAL AIR SANDER, INC.

2820 AUBURN STREET, ROCKFORD, ILLINOIS

grease in functional paper coatings and will produce durable, fire and chemical resistant paints, fabrics and coated wallboard, the company says. It is also weather resistant, a desirable property for tent, awning and tarpaulin coatings, and the new product is finding widespread use for military application in the textile, paint and paper fields.

New Black Magic for Steel

The Mitchell-Bradford Chemical Co., 2446 Main St., Stratford, Conn., manufacturer of the well-known Black Magic blackening processes and finishing materials, announces a new black oxide process for iron and steel known as Black Magic (Type A.)

Type A is a one bath, one salt solution and operates at a temperature of 290°F. It requires only 6½-lbs. of salts per gallon of blackening solution. This results in a much lower cost for the initial blackening solution and a lower cost for the replenishment of the solution drag-out. Because of the lower operating temperature and the low concentration of salt per gallon, the solution is highly fluid and this results in a minimum of loss from drag-out of solution on the work.

Literature describing further details of this new process is available upon request.

Holt Paint Mixer

Fast and thorough blending and mixing action characterizes the Whirlwind Paint Mixer made by Holt Mfg. Co., 651 20th St., Oakland 12, Calif.

The Holt Mixer will take any size container, from a 1/4-pint to a full gallon, either metal or glass, simply by lifting the spring clamp by its handle, placing the container in the cradle and flicking the switch. It comes fully equipped, ready to plug in any outlet, with 15-ft. of cord, safety toggle switch, 1/3-h.p. 60 cycle motor, and a V-belt.

Takes glass or metal containers, size 1/4-pint to one gallon. Is driven by 1/3-h.p. motor.

The company's eastern address is 272 Badger Ave., Newark 8, N. J.

Self-Adhesive Safety Signs

A new line of self-adhesive "Quik-Label" Safety Signs has been developed and introduced by the W. H. Brady Co., Dept. 237, Chippewa Falls, Wisconsin.

Brady Safety Signs are printed on extra strength cotton cloth which has a self-adhesive backing. The message is shown in large bold letters on the proper safety background color. Each sign is coated with Silicone Plastic which protects it from dirt, grime, moisture and weather. They may be used for either indoor or out-of-door application.

The signs come mounted on handy dispenser cards. They may be quickly removed from the card and instantly

EXPERIENCED

"Custom-built" Industrial Finishes result from experience, the combined experience of the manufacturer and the men who make the paint. The men at Mansfield Paint are experienced in working with manufacturers to achieve the right finish for any industrial product.

The **MANSFIELD**
PAINT COMPANY
Mansfield, Ohio Chicago, Illinois

FINISHES FOR INDUSTRIAL PRODUCTS

applied. They stick without moistening to any clean surface. Anyone can apply them—everyone can read them. Use on windows, doors, walls, machinery, etc.

A wide selection of over 550 different Quik-Label Safety Signs and Pipe Markers are available. Special signs can be obtained with any wording and in any colors desired.

New Wood Preservative

A new wood preservative called "Cellu-san" has been brought out by Fungitrol Chemicals, Inc., of Hillside, N. J.

Designed to lengthen the life of wooden pallets used for industrial purposes, boxes, baskets, and crates, Cellu-san has been released nationally following intensive field tests by representative firms in various sections of the country. Pallets treated with Cellu-san withstand rougher handling, are free from any residual odor, and are protected from mold and mildew attack by the preservative's fungicidal properties.

Cellu-san's water repellancy reduces swelling, warping, and shrinkage. It also improves the wood's nail-holding power and preserves wood resiliency.

Wood Finish, Tough, Hard for Inside, Outside

"Platon", a new pure phenolic plastic finish for wood surfaces, with remarkable wear and corrosion resisting qualities, is announced by the Minnesota Platon Corp., Pipestone, Minn.

According to the manufacturer, the new finish contains no oil or other deteriorating substances; it is alcohol and moisture proof, acid resistant, fire retardent and resistant to all the usual elements of corrosive wear. Surfaces finished with Platon will retain a high gloss for years and require no waxing or scrubbing.

The new plastic finish features a "Bake-O-Matic" process, caused by the finish and its hardener, which produces a "baked-on" finish *without baking*. The resultant finish is hard but not brittle; and will not chip, crack or peel . . . Excellent for wood floors, bowling alleys, tennis racket handles and frames, ski bottoms, toboggan bottoms, log cabins, knotty pine interiors, wood furniture, and other wood products.

Pocket-Size pH Meter

A revolutionary pocket-size pH meter and companion probe unit are announced by Analytical Measurements, Inc., 585 Main St., Chatham, N. J.

The meter is scaled from 2 to 12 pH for easy reading, and a simple ad-

Comes in a handy camera-type carrying case

Industry's Most Versatile Medium!

CLAREMONT *Flock!*

Claremont Flock is unexcelled in the art of make-believe. Rich, deep-tufted surfaces economically bespeak luxury. Serve both decoratively and functionally. In addition to industry's use of Claremont Flock on boxboard and papers, it is also applicable to almost any adhesive-prepared surface. At minimum cost, the results insure maximum allure. Servicing industries already number many conveniently located, experienced handlers and ingenious processors. These well-equipped sources are fully qualified to counsel with you. We, at Claremont, will be very happy, upon request, to furnish complete details, color cards, flock samples and prices. Inquiries invited!

18 BRILLIANT SHADES
Also Black, White, Neutral

Decoratively Fascinating • Industrially Proven

Flock can be easily applied by either the air nozzle, silk screen or dip processes on glass, wood, paper, metal, fabric or plastic . . . of any shape or size. Speaker grilles, turn-tables, toys, velour and suede papers, greeting cards, banners, signs, displays, packaging and the fashion field have achieved unusual effects with Claremont Flock. Produces the feel and appearance of rich fabrics, suedes and velvets.

For finishing, coating, insulating, sound-deadening, shock-absorption, bolstering, etc., Claremont Flock is proving not only more workable—but more economical. Its instant availability makes it most desirable for general industrial purposes.

Also—Fillers for Plastics and Rubber Formulations

CLAREMONT WASTE MFG. CO.
The Country's Largest Manufacturer of Flock
CLAREMONT • NEW HAMPSHIRE

justment gives readings from 0 to 14. Accuracy of 0.1 pH is obtainable. Hearing-aid type batteries provide up to 1300 hours of operation. The electrometer tube, switch and input connector are sealed in a single unit to ensure freedom from high humidity difficulties. One-knob control and continuous reading features simplify operation for untrained personnel. Grounded samples can be directly measured because of no external power connections. The instrument and electrode are completely shielded.

Lubseals Mask Oil Fittings

Lubseal is a small plastic cap that snaps over standard grease fittings, sealing out all foreign matter. Lubseals are used in the finishing department to prevent grease fittings from becoming paint-clogged. Before painting, snap on Lubseals; after painting, Lubseals may be removed and used on successive painting operations.

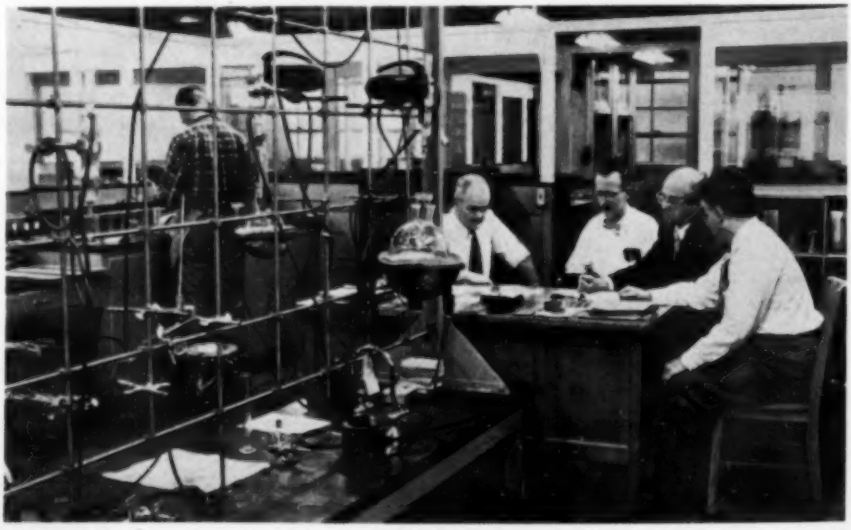
Lubseals have other uses, too. Bright red in color, they flag every grease fitting, insuring lubrication. They keep abrasive dust, grit and metal chips from vital bearings.

Manufacturers of both heavy and light machinery are using this device in the painting operation, and to protect, and flag, grease fittings, after finished machinery leaves the plant. Lubseals are manufactured by Wilson Plastics, Inc., 1531 Milan Road, Sandusky, Ohio.

Nubian Industrial Div'n. Lab.

The Nubian Industrial Division of The Glidden Co. of Cleveland, can now meet industry's varied demands for industrial finishes on metal, wood and other materials. Largely responsible for this is the division's new laboratory at 1850 North LeClaire Ave., Chicago, three times its former size.

The recently finished three story laboratory building is devoted to solving any problem concerned with organic finishes for industry from control testing of raw materials to the application of new coatings under production line conditions.



Interior view, new research laboratory of the Glidden Co.'s Nubian Division in Chicago.

Why hot caustic can't destroy EPON® RESIN finishes!

Thousands of surface finish manufacturers all over the country saw this test . . . and were amazed!

The Set-Up. On the left beaker: a standard aluminum foil. On the right beaker: more of the same aluminum foil, but with the underside coated with an Epon resin enamel. In both beakers: an indicator liquid. Poured on each sheet of foil: hot 20% caustic solution.

The Result. On the left: the caustic eats through the aluminum foil in 12 seconds. On the right: the foil dissolves here, too, but the Epon coating is unaffected. The caustic remains suspended indefinitely *by the Epon film alone!*

The Reason. Epon resins are an entirely new class of polymer—with *an ether linkage* instead of the usual ester bond. Epon has unparalleled resistance to detergents, caustics, many acids and stain-producing agents. And . . . Epon's inertness is backed up by outstanding flexibility and toughness.

• • •

The demand for Epon resins is ahead of present production. Increased capacity is on the way. Now is the time to develop formulations based on these new resins. Experimental quantities may be obtained for evaluation.

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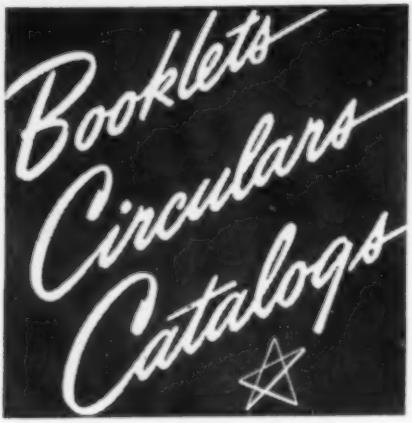

Laboratory Apparatus

Bulletin 515, issued by Andrew Technical Service, 3805 N. Clark St., Chicago 13, Ill., contains 16 pages describing laboratory equipment.

Fan for Sulphuric Jobs

A new product developed by International Engineering, Inc., Dayton, Ohio, is an exhaust fan designed specifically for handling sulphuric acid fumes. Carpenter No. 20 is capable of withstanding sulphuric acid attack at temperatures up to 176° F.

New Free Book on Shellac

Complete practical information about shellac for use in the finishing room is revealed in a new Shellac Manual for furniture finishers, published by Shellac Information Bureau, Dept. 1, American Bleached Shellac Mf'rs. Ass'n., 65 Pine St., New York 5, N.Y.

Steam-Detergent Cleaning

An interesting discussion of how steam-detergent cleaning saves time and work, and helps cut costs in connection with certain industrial operations is provided in an illustrated folder available from Oakite Products, Inc., 32F Thames St., New York 6, N.Y., manufacturers of industrial cleaning and related materials.

Vinylite Acetate Resins

Latest data on forms, properties and applications for Vinylite brand acetate resins are available in a new illustrated, 28-page booklet published by Bakelite Company, a Division of Union Carbide & Carbon Coporation, Dept. 1503, 300 Madison Ave., New York 17, N.Y. Compiled as a technical reference source, the booklet embodies descriptions of Vinylite vinyl acetate resins, including graphs, tables and necessary information required to formulate these products successfully. Bakelite Company supplies these resins only in the form of raw materials, and does not manufacture finished products.

Safety Booklets You Need

Four new booklets on safety, designed for distribution by plant foremen or as payroll enclosures, have just been announced by the National Safety Council. The booklets cover safety in the plant, at home and on the highway. Humorous cartoons and light treatment in the text sugar-coat the "message."

Sample copies of the booklets and prices may be obtained from the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Coatings for Gray Iron 76-Page Book, $1.75

A new 76-page illustrated book on the subject of "Metallic and Non-Metallic Coatings for Gray Iron", by C. O. Burgess, Technical Director, has been published by the Gray Iron Founders' Society, Inc., 210 National City-E. 6th Bldg., Cleveland 14, Ohio.

The book contains a great amount of authoritative information of value to all finishers in metal.

Rubberized Gloves

American Rubberizing Co., 617 11th Ave. South, Minneapolis 4, Minn., announces release of a new 4-page bulletin describing the processing of canvas and cotton knit gloves with natural rubber, Neoprene or plastic. Gloves so processed include both men's and women's industrial work gloves. The bulletin gives the range of styles, sizes and colors available, plus descriptions and applications of each.

Plastic Surfaced Plywood

The first catalog folder on plastic surfaced plywood has just been issued for the use of dealers, architects, engineers, industrial designers and other specifiers.

The catalog, issued as a reference manual, describes the types of plastic surfaced Douglas fir plywood, properties of the overlay panels and some of the countless applications in building and industry. Also included are recommendations for

use of the new premium-surface panel material which combines all the desirable properties of fir plywood and plastics.

For your free copy of this handy guide which is published in letter size for easy filing, just write Douglas Fir Plywood Association, Tacoma 2, Wash.

Plastic Pipe Fittings, Etc.

Complete engineering data on tubing, pipe, valves and fittings of Ace-Saran and Ace-Parian (polyethylene) plastics are given in a new bulletin just released by American Hard Rubber Co., 11 Mercer St., New York 13, N.Y. Resistant to most chemicals, these materials are lightweight, tough, durable, have high impact strength.

Bulletin of Paint Heaters

A new 8-page folder, printed in black and red, illustrates and describes several of the latest models of Bede paint heaters for heating (and thinning) lacquer, varnish, enamel, synthetic, vinyl plastic and sound deadener materials before they are applied by spraying, dipping or roller coating. For a free copy of this informative folder on modern methods and equipment, write or telephone to Bede Products, Inc., 4311 Ridge Road, Cleveland 9, Ohio.

Metal Cleaner Booklet

Four Cowles Metal Cleaners are discussed in a new booklet, "Heavy Duty Cleaning The Fast Way", just released by Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3, Ohio.

The booklet explains how and why operating time can be cut and cleaner costs lowered when Cowles HD-N Cleaner is used in heavy duty metal cleaning. It points out types of soil removed and the physical and chemical methods used in their removal. HD-N is discussed fully, along with Cowles LP Cleaner for removing buffing and drawing compounds, Cowles SK Cleaner for oil, fat and grease removal with Cowles "Lixol" Cleaner for use in pressure-spray washers.

Materials Handling Equipment

A new comprehensive catalog of materials handling equipment has been released by the Yale & Towne Mfg. Co.'s Philadelphia Division. Subjects covered include a general description and application data on Yale's gas and electric fork lift trucks, motorized hand trucks, hand lift trucks, and hand and electric hoists.

For a copy of this 44-page illustrated bulletin write to the Yale & Towne Mfg. Co., Philadelphia Division, 11000 Roosevelt Blvd., Philadelphia 15, Pa.

BUILD A
BETTER
FINISHING
DEPT.
Improved
DETROIT
HANDY TAC RAG
NON INFLAMMABLE
Switch to DETROIT "TAC" RAGS and avoid rejects. Remove all dust, lint and sand quickly, efficiently. The standard for 16 years. Order from your supplier today, or send for sample.
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DETROIT "TAC" RAG
DETRO MFG. & SALES CO., INC., CULVER CITY, CALIF.

Finishing Equipment-Systems

PLANNED, BUILT, INSTALLED

Dip • Flow • Spray

✔ AUTOMATIC

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May we suggest to you low cost top quality production methods?

Morrill and Renshaw Inc.

Finishing–Coating–Spraying Engineers

624 N. GREEN ST.

CHICAGO 22, ILL.

Manufacturers of Baking Ovens, Washing Machines, Spray Booths

Spe-de-way

WOOD BLEACH

This single operation, controllable, Patented Bleach

- **Requires No Neutralization**
- **Does Not Raise the Grain**
- **Leaves No Deposit**
- **Wood Is Left Neutral**
- **Economical . . . Dependable**

Gallon Unit makes two gallons of bleaching solution. Application by spray or synthetic rubber sponge. Wood is ready for finishing in less than two hours.

Delivered prices quoted on request.

Spe-de-way **Products Co.**

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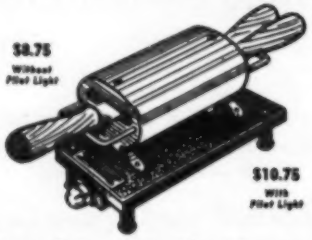
3639 N. Columbia Blvd., Portland, Ore.

No String Tied To This—

If You Use OP-AL



Patching Knife Heater

STANDARD FOR OVER 25 YEARS

Sold By All Leading Jobbers

THE OP-AL ELECTRIC AND MANUFACTURING COMPANY

807 N. SENATE AVE. - INDIANAPOLIS 7, IND.
Phone: Lincoln 8250

3M Adhesives, Coatings, Sealers

Properties of over 100 industrial adhesives, coatings and sealers — including strippable coatings for protecting metal finishes—are described in a new catalog available from Minnesota Mining & Mfg. Co., St. Paul, Minn.

The 32-page booklet—"3M Adhesives, Coatings and Sealers"—announces that more than 1000 formulas are available, and offers research help for industrial customers in selecting the right product for the job.

New Paint-Miser Literature

Ashdee Products, Inc., manufacturers of the new Paint-Miser, an electronic accessory for paint-spray equipment, recently issued a new 4-page, 2-color folder which describes the new unit in detail. The literature tells how Paint-Miser charges the paint particles with a negative electrical charge after they leave the spray gun, to be attracted to the item to be coated which is at ground potential. Diagrams and photos show how easily Paint-Miser is adapted to present finishing equipment. A copy of this new literature may be obtained without cost or obligation from Ashdee Products, Inc., 18029 Dixie Highway, Homewood, Illinois.

Automatic Coating and Drying

A new 16-page booklet 8½x11-in. presents a timely and practical exposition of some of the more advanced machine design elements involved in continuous coating equipment for textiles, papers, films and foils, and strand materials.

It is clearly written and well illustrated; includes information about various types of complete coating systems—roller coating, dip coating, unwind stands, cooling drums, pull roll stands, drying machines, etc.

The booklet utilizes to good advantage some 50 drawings and photographs keyed to the text. Copies may be obtained without charge by writing to Industrial Ovens, Inc., 13825 Triskett Rd., Cleveland 11, Ohio.

Conference on Ind. Finishing

The Bristol Foreman's Club of Bristol, Tenn.-Va., with the cooperation of the University of Tennessee, is sponsoring The Southeastern Conference on Industrial Organic Finishing, June 13, 14, 15, 1951.

The conference will include product and maintenance finishing.

Addresses and discussion groups for the three days will include surface preparations, painting equipment and finishes.

Plant tours and a banquet on Friday the 15th will conclude the conference.

For reservations contact R. K. Cooper, Monroe Calculating Machine Co., Box 191, Bristol, Va.

No. 150
Speed Way Speed Sander *Sands, Rubs, Polishes*
... FOR DRY OR WET FINISHING
Motor-Driven
3/16" Orbital-Motion

Powerful, direct-connected (no gears), 3450 r.p.m., 100-120 v AC air-cooled motor. All sealed ball-bearing construction. Die-cast aluminum housing, polished. All-position handles. In hand weight only 5 lbs. Insulated with ground wire for wet as well as dry sanding or rubbing. Available accessories—deep contour pads, surface plates, felts, etc. Takes any sheet abrasives—3 covers 4½" x 6½" from standard 9" x 11" sheet.

A time saving quality tool priced so every worker can have one.

$34.50

Write for Circular

Speed Way MANUFACTURING CO.
1886 So. 52nd Ave., Cicero 50, Ill.

Form-A-Roc • *FIRST COAT*

FOUNDATION FOR FINE FINISH

1. Dries with lacquer speed.
2. Has double lacquer solids at spray gun.
3. Fills very well—sands easily.
4. Adheres tenaciously to steel, wood, presdwood, aluminum, galvanized metal, etc.
5. Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.
6. Thins 3:1 with xylol.
7. Available in GREY, SALMON and OFF-WHITE.
8. Ground well to smooth texture.

MADE BY

THE VARNISH PRODUCTS COMPANY

5206 Harvard Avenue Cleveland, Ohio

Industrial FINISHING Editorial

Distrust Your Best Friend?

Mr. User of Finishing Materials, do you get along with your supplier? Are you proud of the brand of materials you use and the concern that supplies them? And on friendly terms with the company's representative or someone in the organization?

Your supplier of paint, varnish, lacquer or synthetic materials, or the firm's representative, should be one of your best friends. He can and will help you with your problems—and every user of finishing materials has problems and troubles occasionally or frequently. This friendly relationship is an extra value available to you with the containers of material you buy. It can be the means of keeping you better informed on how to use those materials effectively and economically. The suggestions and ideas you get through friendly talks with your supplier's representative can be the means of keeping you informed about the latest methods, equipment and supplies to use in finishing your own and related products. Friendly cooperation can be worth a great deal to any user of finishing materials.

Unfortunately, this trustful friendliness doesn't always exist between the industrial user and supplier of finishing materials. Some concerns are practically strangers to the personnel of firms from whom they make purchases. They keep people out of their factory and do not discuss their problems with salesmen, technical representatives or service men. As a result, there is no exchange of ideas or information with men who are in the know of what is the latest in modern industrial developments.

Eventually, it may dawn on the management of such a concern that they must do some modernizing in their production department. Still clinging to the tradition of being distrustful of reliable concerns who manufacture and sell well known brands of materials or equipment, they put out a blind inquiry to some "technical service bureau", advertising agency or public relations organization. Eventually their inquiry finds its way to one or more trade publications who may give some advice of their own or relay the letter on to a manufacturer qualified to take care of it. What a roundabout and doubtful way to try to get technical information relating to a specific problem or process in mass production.

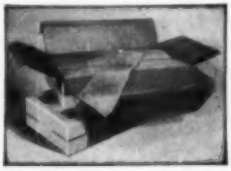
Recently, when we referred one of these blind inquiries to a leading manufacturer of finishing materials, the company's Technical Director wrote us partly as follows:

"I have discussed the letter with our sales department and have been advised that they do not like to get into situations through the back door. They particularly do not like to make their contacts through an agency because, in most cases, it has been found that agencies are just fishing for information . . . and we never hear anything more about the matter. The information we supply is obtained at considerable expense and we feel it should not be passed out without charge, except to persons whom we believe are acting in good faith and intend to buy our products.

"In the past you have referred a

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.



Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free. It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Baughn Chemical Products Company
"The Tacky Wiper Specialists"
7027 N. RAVENSWOOD CHICAGO 26, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON

BARRETT "FILWHIRL" ENAMELERS make easy work of many difficult coating problems

The Barrett Centrifugal Enameler

The Barrett "Filwhirl" Centrifugal Enameler provides a sure, clean and economical method of applying materials to parts or products that can be rotated. It saves coating material, time and expense. It is designed for bulk handling, and speedy production requirements.

It has proven highly successful in coating helical springs, clips, clasps, zipper parts, bead and link chain, toys, automobile and luggage hardware, misc. metal stampings, castings, etc. Excellent results are also obtained with japan, lacquers, varnishes, paints, waxes. No drips or fatty edges.

Furnished in spindle post, fixed bowl, and carrier types, in several capacities. Safety features included and auxiliary equipment is available.

Send a few representative samples to be processed and submitted for your examination.

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS

now A
VERSATILE
CLEAR METAL LACQUER
SPRAYING
for DIPPING
TUMBLING
HIGH GLOSS
PERSPIRATION RESISTANT
ABRASION RESISTANT
SULPHIDE RESISTANT
WILL NOT TURN GREEN
in tank when dipping
copper or brass.
NON JELLING
with aluminum powders
UNUSUAL STABILITY
with bronze powders
UNEXCELLED ADHESION
WATER WHITE
FLEXIBLE
NITRO-STAN
CLEAR METAL LACQUER
#1920
order now from
STANDARD COATING CORP.
455 BROAD AVENUE
RIDGEFIELD, NEW JERSEY

number of worthwhile leads to us and have given us the name of the prospective customer, urging that we follow up directly, and this we like to do. We would probably be in a position to help this outfit if they would care to come to us directly, but we do not want to go through any advertising agency or other consultant to contact the customer."

Paint Formulators Now Become Specialists

★ The paint industry, like many others, has been through a revolution in the last 30 years. New materials and methods have continued to be developed through that period. This process is still going on. New film-formers, resins, pigments, oils, plasticizers, driers, stabilizers, etc., are constantly being introduced and being evaluated against older materials. New methods and refinements in manufacturing, handling, applying and drying coatings are finding their way into industry.

The result of these changes is to make the task of the paint formulator considerably more complicated than it was 10, 20, or 30 years ago. He has changed from an artist to a scientist. The general formulator — one who formulates coatings for every type of use that comes along—is disappearing or already has disappeared. As the coatings industry has become more scientific, the formulator has specialized. He may work principally with lacquers—or with enamels. He may be more highly specialized, working

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

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with vinyl lacquers or air-dry enamels. His specialty may be coatings for a certain end use, as furniture coatings or marine finishes. His work may deal with a certain application, as roller coatings or silk screen coatings.

The field today is too wide for one man to know the many thousands of raw materials used in lacquers, enamels, latices, emulsions, organisols, varnishes, paints. Coatings may be applied by brushing, spraying, flow-coating, roller coating, tumbling, hot-spraying, dipping, etc. These finishes are applied to metals, woods, papers, plastics, concrete, etc. Each end use has different requirements and demands individual testing procedures. Lacquers for furniture, playing cards, cables, airplane wings, bowling pins, automobiles and stoves are different in composition and tested differently.

This trend to specialization is healthy if it is not carried too far. A general knowledge of the industry and perspective are still needed. The paint industry has come of age. A scientific approach and specialization are signs of this maturity.—*E. V. Goldstein.*

How to Keep Your Finishing Help

★ What can the foreman of an industrial finishing department do to counteract the enticement of those who try to lure away his best workers? Keeping efficient employees is an important task these days. The following suggestions are helpful in direct proportion to how early they are applied.

1) Encourage workers to discuss with you any problem that affects conditions in the department, morale, satisfaction with the job, and so on. Labor piracy thrives on little resent-

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A silk screen department costs very little to set up and pays for itself many times through faster production.

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ments that would look a lot smaller after a heart to heart talk with the boss or his representative.

2) The finishing department hires men of high skills which are very attractive to other employers. Be sure you are using your men to the full extent of their ability and experience. Make everyone feel important. Let no one feel that part of his talent is being wasted. The labor pirate finds this an easy avenue of approach.

3) What advantages does your finishing employment offer beyond those of other employers? List them on your bulletin board and in your company paper. Discuss them often and add to them as the opportunity arises. Put forth as much effort to hold your men as you would to attract new workers, and the labor pirate will have poor pickings in your plant.

4) Cooperate with the defense effort, of course. But point out, tactfully to your men to watch for the labor pirate who uses this angle to cover up purely selfish reasons for wanting your top-notch producers.

5) If or when you lose a man, get all of the details about why he changed employment. This information may help you to change matters in your finishing department so the same situation doesn't arise again soon.—*D.G.*

Continuously Cleans Conveyor Chain

★ In looking over a paint system where whirling paint applicators are used to put on the prime coat I noticed that some of the conveyor racks had an accumulation of primer that resembled a fringe of icicles. Other

racks were clean, entirely free of primer, and the overhead conveyor chain was clean.

"How do you keep the racks and chain clean?" I asked the finishing foreman. "Well, he said, "as for the racks, we burn off the accumlation of primer about once a week, taking a definite quantity each day. That is the reason why you see some of the racks on the conveyor line clean while others have 'icicles' of primer."

"Now, as for the chain," he continued, "I rigged up a scraping device made of spring steel and a series of tension springs. We use two of these gadgets, one on each side of the conveyor chain, and they are slightly offset in relation to each other. The spring steel of each gadget scrapes three sides of the conveyor chain—the top, bottom and one side. Of course the top and bottom of the chain are scraped twice, but that is all right.

"The tension springs allow the steel scrapers to move back at each conveyor hook, and then snap back into scraping position until the next hook comes along. We place an open head drum just beneath the scrapers to catch the dried material as it falls from the scrapers."

The chain scrapers are located between the unloading and the loading stations. Continuous scraping keeps the chain clean.—*Engineer.*

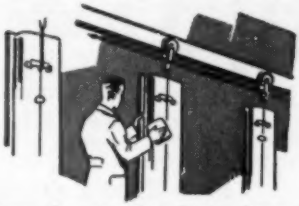
Aluminum Paints Not All Alike

★ Far too many private and industrial users of paint think of aluminum paint as a product of only one composition; and they try to use the same material for interior and exterior purposes, for air drying and baking operations.

Aside from the wide range of aluminum powders and pastes which vary

DUST-ALL Tack Rag

for better, cleaner finished jobs



Remove the specks, lint, dust from surfaces to be painted; wipe them off with a Dust-All Tack Rag; be sure of fine, blemish-free, finished jobs.

Get the Dust-All Tack Rag in the familiar Red Checkered Bag; also available in 150-250-500 yard rolls.

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in particle size and leafing properties, the vehicles or liquids used may be any of a large variety such as asphaltic, oleoresinous varnishes ranging from short to long oil length, alkyd solutions including the urea or melamine modified, nitrocellulose lacquers, vinylite solutions, chlorinated rubber solutions and many others.

It is always wise to consult your paint manufacturer to be sure of using the most suitable type of aluminum paint for your particular problem.—*Louis E. Martin.*

Industry Needs More Trained Paint Foremen!

★ Every paint chemist who has done much service work must have been confounded many times with the complete lack of basic paint knowledge he has found in many finishing departments.

This lack of information is confined neither to any phase of the paint finishing field, nor to a particular industry. It flourishes in both large and small finishing departments, and is as prevalent in their associated purchasing and engineering departments.

The net result is an inefficient finishing department, where rejects are high, shut-down time extensive, production less than it should be, and the quality of finished work mediocre.

The solution would seem to be: Put a trained paint foreman in charge! The problem then is to find such a trained man, or to train one. This problem lies unnoticed at the doorstep of the paint manufacturer. He can and must provide training facilities to produce properly trained men who will know how to wisely select and use paint materials. If he provides it, he will be doing his customer and himself a valuable service.—*H. H. Miller.*

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Save Used Paper Boxes; Wrapping Paper

★ As you may know, a severe shortage of wastepaper, especially old corrugated boxes, brown wrapping paper and bags, exists today. Unless the supply of these kraft pulp substitutes is increased, the supply of paperboard will become even more acute.

Old corrugated boxes, kraft papers and bags are the best sources, next to wood pulp, of strong fiber materials needed for the manufacture of paperboard products.

More old corrugated and kraft will be needed for paperboard manufacture during the months ahead. This is reflected in government requirements. However, at the present time, only 20% of the corrugated now manufactured finds its way back as waste paper, as compared to much higher percentages for old newspapers and magazines.

The supply of this vital raw material must be increased. Reports from many sections of the country are that industrial plants and retailers, while pressing for increased packaging supplies on one hand, are destroying the raw material from which this packaging is made.

If we are to meet civilian and war requirements for this packaging, destroying of this essential raw material must stop. Please save old corrugated and kraft paper and bags, and get them back to the mills via a waste paper dealer.—*Midwest Consumers of Waste Paper.*

What It Does for the Workers Too

★ Out of many possible reasons for purchasing new equipment for the finishing department, one stands head and shoulders above all others: Savings! Management becomes quite enthusiastic about this matter and then wonders why workers are not similarly impressed.

Let's face the truth. It isn't easy to welcome new equipment simply because it will make more money for the boss; it should mean something beneficial to the workers too.

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In that new improved equipment may be found savings for every employee. Pointing out and emphasizing those angles to key workmen can make a world of difference in their mental attitude to management. Until the finishing department's investment in modern equipment has been fully accepted by those who are to use it, management cannot expect to get full employee cooperation, top efficiency and maximum results.

Train foremen finishers to point out to their men the potential savings in energy that is brought about by using new equipment which cost a lot of money. Everyone gets his work done with less physical effort, and goes home with enough "pep" to enjoy his leisure hours.

Talk about the relief in nervous tension which is brought about by certain automatic features. *Here is an angle that means more to a worker in the finishing department* than all the talk about money savings for management. It means something to *him*.

Discuss new equipment in terms of saving productive time through eliminating accidents. No program can prevent all of the suffering and financial loss caused by accidents—except methods that prevent the trouble from happening. Show your men how you are saving them from the danger of injury, and you have an attentive audience.

Ideal conditions of ventilation, temperature, humidity, etc., are difficult to attain in the finishing department; but every step in that direction can be measured in terms of less discomfort and less absenteeism for employees. Since new equipment brings continued improvement, it should be presented as a substantial saving in both contentment and a full pay envelope.

Management frequently fails to realize that what the worker thinks

about new equipment is almost as important as the wonderful features that are built into that equipment. While financial savings may have been a primary reason for installing it, there are always savings of the kind outlined above. Tactfully pointing them out to the foreman finisher so he can discuss them freely with his men, ought to be considered a definite part of every program for buying and installing new equipment.—*G.M.D.*

Find and Reduce Wastefulness

Waste can never be entirely eliminated but it can be controlled and reduced. Never has there been a more appropriate time than right now to start a waste elimination program in industry.

A complete, well rounded and systematic program of waste elimination will produce results. An effective program will include observation, careful inspection and study by crews of experienced men who are definitely assigned to various departments of each establishment. The executive branch of the business and the office, as well as storage, production and shipping departments should all receive the same searching investigation.

Crews should be instructed to find waste wherever it exists, regardless of its location and who may or may not be responsible for it. All employes should be informed of what the program is to accomplish, to gain their cooperation. Also, employes should be impressed with the fact that the investigation to find sources of waste is not a witch hunt designed to show up any individual or group of employes or any department.

After writen reports are turned in, management should hold meetings with department heads and with foremen present to act on the findings of

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Simply fill Tubular Glass Paint Fountain with paint or lacquer and Knurled Wheel Tip feeds paint evenly! Tips interchangeable. Master Paint Striping Tool complete with 1/16" tip, $1.00. Other complete tools with 1/64", 1/32" 3/64", 5/64", 3/32", 1/8" widths, $1.50 ea. Extra tips $.75; complete kit with tool and 7 tips, $5.00. Used by industry on production striping. See your dealer or order direct today.

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the waste elimination crews. Finally, *the most important part of the entire program is to act upon and follow through to completion on all reported sources of waste that can be reduced or eliminated.* Without effective action, the entire program fails.

Keep Salesmen to Aid Your Customers

Dispense with salesmen during the Defense Emergency? No! Not unless you are quitting business forever. What to do with them?

One concern that makes and sells machines and equipment for industrial concerns is modifying its normal sales effort in recognition of drastically changed conditions related to the defense effort.

Among new efforts which are or soon will be actively in effect, the following are of interest:

1) A complete new line of instruction books on maintenance of its equipment is in preparation for use of customers to help them keep their equipment at top operating efficiency.

2) The firm's salesmen are active in helping customers in maintenance by on-the-spot service or, when needed, speedy appeal to the home office for assistance of an emergency service man.

3) Salesmen are trained to point out the versatility of available equipment and attachments so that customers can speed deliveries by using standard or quickly available equipment.

4) Salesmen explain priorities and interpret DO's when necessary, and help customers to follow correct procedures.

5) Salesmen still attached to the sales staff help on field expediting and work, on request, from the Purchasing Department in locating scarce materials and new sources of supply.

6) Salesmen cooperate with customers in studying and analyzing future needs.

It has been found that the Sales Department activity not only greatly aids the company's customers directly, but it provides an excellent opportunity for each salesman to re-educate himself and his customers on all phases of the firm's equipment and services.

Leave Experimenting Out of Production

Experimenting with finishing materials, thinners and solvents can be expensive and even dangerous business in a production plant. Here you just can't afford to have failures. Things move so rapidly and in such great volume that a failure, which might mean little to a small shop, could cost thousands of dollars in re-

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jects, stripping and refinishing in a production plant—and it would create a terrific upset in production schedules.

Today, with so many highly specialized formulations of synthetic materials as well as oil-base finishes, nitrocellulose lacquers, etc., the old practice of adding just any thinners or retarders can be very disappointing. Through such additions the entire formulation may be changed and thrown out of balance. This could cause disastrous results in the finish. Through research, new resins are frequently added to the great variety now available. These and other materials in certain proportions have made it possible to produce new and improved finishing materials, but they perform satisfactorily only when used in accordance with the manufacturer's instructions.

Shuman Chemical Products, Inc. in New Home in N. J.

Shuman Chemical Products, Inc., formerly of Kearny, N.J., is now located in a new modern building at Industrial Village, 20 Factory St., Cedar Grove, N.J. The company has added improved equipment and facilities to provide increased production of pearlescent pigments, adhesives and specialized coating materials.

More Linseed Oil

Production of linseed oil at the Glidden Company's Buena Park, California, Vegetable Oil Plant, will be increased by the installation of a new type quarter-million dollar extraction plant. By the installation of this new process, the Buena Park plant will be able to use the equipment for various oil bearing seeds. Another advantage is that the new process is an outdoor operation, a great factor of safety.

Decker Corporation Moves

Dr. William E. Decker, for many years Technical Director of Technical Specialties Co., is now giving full time to the technical supervision of The Decker Corporation. This company has moved into its new quarters at 1222 Montrose St., Philadelphia, Pennsylvania.

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B. A. U.

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in supplying the following to exact specifications, government or civilian.

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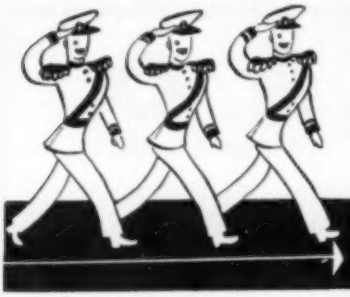

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Bede Products Inc., Announces Distribution in Chicago & N.Y.C.

Bede Products, Inc., manufacturer of the Bede Paint Heater and other hot spray equipment, announces the establishment of a new Chicago Branch Office and new distributors in New York and Cleveland.

The branch office in Chicago (30 W. Washington St., Chicago 2, Ill.) is under the direction of Harold C. Fornwall, District Sales Manager, who will be assisted by Joseph Fasulo and S. S. Baker, both sales engineers. This office will supervise sales and offer additional technical and service assistance in Illinois, Missouri, Kansas, northwest Indiana, Minnesota, Iowa and Wisconsin.

The new distributor for New York City and Long Island is Luis Winston Co., 431 W. 33rd St., New York 1, N.Y. The Winston Co., headed by M. J. Lee, President, will maintain a complete stock of Bede Paint Heaters and will render complete service and installation aid.

R. W. Renton & Co., Inc., 877 Addison Road, Cleveland, Ohio, will handle sales and service in northern Ohio, northeast Indiana and northwest Pennsylvania. The Renton sales force, headed by R. W. Renton, President, will offer a full line of Bede equipment as well as technical aid and service.

Use of organic finishes instead of plating was discussed by B. F. Ames, General Sales Manager, Maas & Waldstein Co., at a recent meeting of the Rochester Branch, American Electroplaters Society. Left to right: W. C. Treadwell, M & W Technical Service Engineer; John Duford, Eastman Kodak; Mr. Ames; Joseph Hull, Eastman Kodak; Walter F. Swanton, Pfandler Co.; R. Flint, Ritter Co.; W. Howard, Bausch and Lomb Optical Co.

Rona Laboratories Occupies New Plant

Rona Laboratories, Inc., (synthetic and natural pearl essence), announces that facilities in its new plant, 352-358 Doremus Ave., Newark, N. J., have been greatly expanded to take care of an increased volume of business.

Alodizing Folder Free

A new colorful folder that reveals practical information and illustrations concerning the treatment of bare aluminum to prevent corrosion and to give the surface better paint bonding qualities is ready for distribution by the American Chemical Paint Co., Ambler, Penna. Photographs of treated and untreated aluminum panels show the advantages of the Alodizing treatment as a protection to the surface of the metal.

Fire Losses Up in Early 1951

Fire losses in the United States have shown a decided increase during the first two months of 1951, it is reported by the National Board of Fire Underwriters.

January's estimated losses were $68,686,000, an increase of 16.8% over January, 1950. February's losses were $69,136,000, an increase of 18.5% over February, 1950.

Surface Preparation of Metals for Black Oxide Finishing

Helpful data on materials and procedures that produce the chemically clean surfaces required for black oxide finishing of metals is presented in a special Service Report available from Oakite Products, Inc., 132F Thames St., New York 6. N. Y., manufacturer of industrial cleaning and allied materials.

After first stressing the importance of proper preparation of metal surfaces to assure consistent, uniform, non-mottled coatings, the Service Report reviews in detail recommended materials and methods for performing the following preparatory operations before black finishing: 1) alkaline cleaning of ferrous metals to remove light soils; 2) solvent cleaning where heavier soils must be removed; 3) electrocleaning ferrous metals to remove carbon smuts and other coatings; 4) rust and scale removal; 5) controlling acid solutions when pickling iron and steel; 6) tank-cleaning of non-ferrous metals; 7) electrocleaning non-ferrous metals. Formulas for using the materials recommended for these operations are specified in each instance.

A special section of the report describes how a hot-oil bath treatment for black-oxide coated parts not scheduled for organic finishing enhances the black finish and provides effective anti-rust protection. In conclusion, the report reviews materials and methods for stripping black finishes from iron and steel and non-ferrous rejects.

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If your defense production contracts require lacquers, use the finish certified for this purpose — NCP LACQUERS. Take advantage of our engineering experience and extensive know-how with government specifications to solve your finishing problems quickly and economically. Write, wire or phone today.
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POSITION WANTED.

Part time striping and graining on metal or wood. JOSEPH PIKE, 591 Halsey St., Brooklyn 33, N. Y. Phone PR-8-1735.

POSITION WANTED.

Finishing Superintendent with 27 years' experience in all phases of organic metal finishes. Have thorough knowledge of production layouts, finishing methods and materials employed. Over twenty years spent in the manufacture of industrial finishes. Conversant with paint formulations and am an A-1 shader. Presently employed but desire change preferably in New England or New York City areas. Address IF-806, care Industrial Finishing.

FINISHING FOREMAN.

Manufacturer in Pennsylvania requires expert finisher on wooden television cabinets. Capable of handling large finishing department and at least 100 men. Must have knowledge both technical and practical in all finishing phases. Good salary. In reply, give full and complete details and references. Address IF-793, care Industrial Finishing.

LABORATORY SUPERVISOR.

Industrial paint and lacquer. Man, 8-10 years' experience in lacquer and synthetic formulations for metal and wood. National organization. Give details first letter. Address IF-798, care Industrial Finishing.

SALESMEN-PROCESS ENGINEERS.

Established national manufacturer of chemical cleaning and processing compounds for the metalworking industry is expanding its sales force, particularly in the middle west and east. An excellent opportunity for men experienced in this field or closely allied lines. Also three openings for experienced chemical process engineers. Give complete details of your experience, type of industries you know best and territory preference. Address IF-804, care Industrial Finishing.

FINISHING FOREMAN WANTED.

Manufacturer of steel cabinets in large East Coast city requires finishing foreman having practical knowledge of conveyorized production in all phases of organic finishing. Must be qualified to meet schedules with high quality finish, in a department of 20 people. Give complete information regarding age, experience, family status, salary requirements and references. Address IF-803, care Industrial Finishing.

SALES DEVELOPMENT SYNTHETIC ENAMELS

Opening for man with synthetic enamel experience interested in sales development and technical service position in industrial finishes department. Supply complete qualifications if interested. MONSANTO CHEMICAL CO., MERRIMAC DIVISION, Everett Station, Boston, Mass.

SALESMAN WANTED

For Wisconsin, Minnesota, Iowa, Nebraska, Kansas and Colorado. Territory has many good accounts of long standing. Excellent opportunity. Send full details of experience. LOUISVILLE VARNISH CO., Louisville 10, Ky.

WANTED EASTERN MANUFACTURER.

To manufacture to our specifications, lacquers and synthetics for woods, metals and plastics in quantity. You supply labor and materials, we supply formulas. Address IF-805, care Industrial Finishing.

SOLVENT CLEANING SERVICE.

Dirty lacquer solvent can be shipped to us for distillation and returned to you clean and ready for use. Within 200 mile radius of Louisville a substantial economy can be realized. Cost runs from 14c to 19c per gal. KENTUCKY COLOR & CHEMICAL CO., 600 N. 34th St., Louisville 12, Ky.

MATERIALS WANTED.

Titanium Dioxide (any grade) needed to carry on our business. Will pay any reasonable premium or exchange for critical chemicals. We would also like to trade some Toluol for Secondary Butyl Acetate at present market price value. Address IF-795, care Industrial Finishing.

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Will buy your dirty Thinners and Solvents. Send samples or letter giving approximate contents and solids. Address THE JOHANN CO., Room 416, 1180 E. 63rd. St., Chicago, Ill.

FOR SALE.

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INDEX to Advertisers

Advance Paint Co. ..... Third Cover
Allied Finishes Specialties Co. 47
American Brake Shoe Co. 18-19
American Air Filter Co., Inc. 29
American Bleached Shellac Mfrs. Assoc. 92-93
American Richwood Products Co. 134
Ashdee Products, Inc. 20
Atlas Powder Co. 69

Barrett Co., Leon J. 129
Baughn Chemical Products Co. 129
Bede Products, Inc. 30
Better Finishes & Coatings, Inc. 135
Beverly Mfg. Co. 95
Binks Mfg. Co. 4-5
Brown Co., Andrew 88
Burdett Mfg. Co. 1
Burroughs Co., Inc., F. S. 140

Capitol Machine Co. 53
Carborundum Co., The 39
Classified Advertising 142
Claremont Waste Mfg. Co. 121
Clinton Co., The 15
Coast Paint & Lacquer Co., Inc. 45
Compo Chemical Co. 134
Conforming Matrix Corp. 55

Day & Co., James B. 87
DeBurgh Conveyors 102
Detro Mfg. & Sales Co. 125
De Vilbiss Co., The 22-23
Dolan & Co., The V. J. 7
Du Pont de Nemours & Co., E. I. 72-73
Duralac Chemical Corp. 139

Egyptian Lacquer Mfg. Co. 101

Fostoria Pressed Steel Co. 10-11

Gerson Co., Louis M. 136
Glidden Co., The 57
Grand Rapids Varnish Co. 2
Gray Co., Inc. 75

Hammond Solvents Recovery Service 138
Harding Mfg. Co. 133
Holland & Sons, J. 60

Ideal Chemical Co. 136
Interchemical Corp. ..... Second Cover
Iridescent Pigment Corp. of Amer. 136

Kay & Ess Co., The 113
Kirk & Blum Mfg. Co. ..... Back Cover
Kirker Chemical Co. 61
Koch & Sons, Inc., Geo. 26

Lanly Co., The 47
Lawrence-McFadden Co. 99
Lilly Varnish Co. ..... Front Cover
Liquafill Mfg. Co. 138

Maas & Waldstein Co. 37
Mansfield Paint Co., The 119
Mearl Corp., The 27
Midland Industrial Finishes 41
Miracle Paint Rejuvenator Co. 137
Morrill & Renshaw, Inc. 125

National Air Sander Co. 117
National Chemical & Plastics Co. 141
National Lacquer & Paint Co. 140
National Paint, Varnish & Lacquer Assn. 48-49
Naz-Dar Co. 132
New Wrinkle, Inc. 62-63
New York Woodfinishers Supply Co. 97

Oakite Products, Inc. 60
Op-Al Electric & Mfg. Co. 126

Pacific Resin Co. 143
Pelron Corp. 12
Perfection Paint & Color Co. 83
Peters-Dalton, Inc. 59
Pittsburgh Plate Glass Co. 16-17
Potter Paint Co. 9
Processed Chemical & Coatings Corp. 131

Qualatone Products, Inc. 95

Randolph Products Co. 115
Ransburg Electro-Coating Corp. 14
Reliance Varnish Co. 81
Rinshed-Mason Co. 107
Rockford Varnish Co. 103

Sander Co., The Monroe 21
Schmieg Industries, Inc. 13
Shell Chemical Corp. 123
Sherwin-Williams Co. 28
Snyder Brothers Co. 109
Solvents Recovery Service, Inc. 138
South Florida Test Service 140
Spe-de-way Products Co. 126
Speedway Mfg. Co. 127
Spruance Co., The Gilbert 85
Standard Coating Corp. 130
Standard Industrial Products, Inc. 91
Standard Varnish Works 111
Stille-Young Corp., The 90
Strathmore Products, Inc. 24
Sundstrand Machine Tool Co. 105

Torit Mfg. Co. 35
Tousey Varnish Co. 31

Unifilm Paint Co. 133
U. S. Stoneware Co. 25

Varnish Products Co. 127
Vol-U-Meter Co. 12-143

Watson-Standard Co. 43
Wendell Mfg. Co. 137
Wilkinson Equip. & Supply Co. 90-97
Wilson-Imperial Co. 8

Young & Bertke Co. 71

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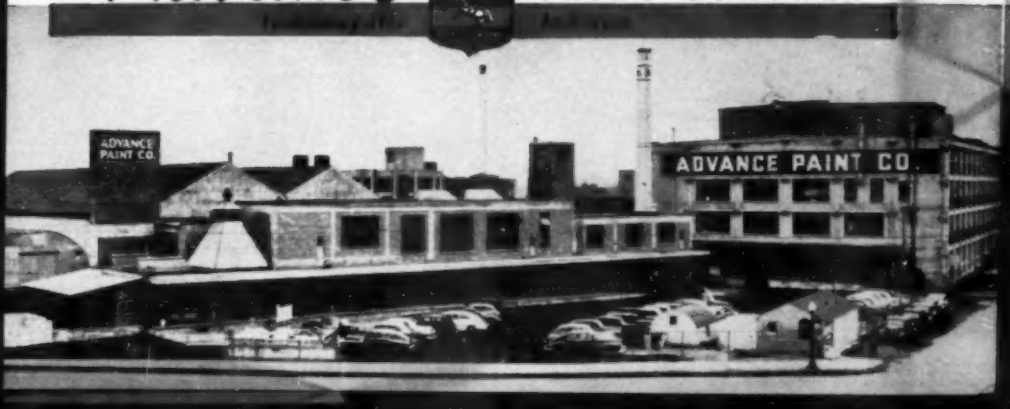

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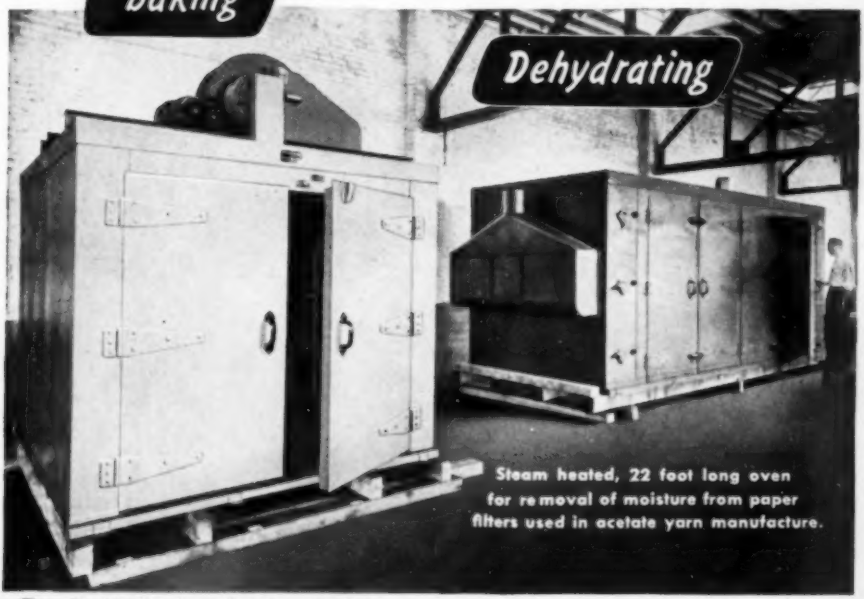

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